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STATE OF MONTANA

GOVERNOR'S COMMITTEE ON REORGANIZATION

AND ECONOMY

UNIVERSITY OF MONTANA;

THE STATE'S PROVISIONS FOR HIGHER EDUCATION

(Report No. 56)

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REPORT ON

UNIVERSITY OF MONTANA;

THE STATE'S PROVISIONS FOR HIGHER EDUCATION

Introduction:

In 1881, Congress passed a law granting 72 sections of land to Montana for university purposes. The enabling act, of 1889, granted 100,000 acres for a school of mines, 100,000 acres for normal schools, and 140,000 acres for an agricultural college.

In 1893, the legislative assembly of Montana established the state university at Missoula, the state agricultural college at Bozeman, the state school of mines at Butte, and the state normal school at Dillon. The land, and the funds produced by the sale of the lands, have been far from adequate to support the institutions. Their main source of support has been, and now is, legislative appropriations made from a special mill levy assessed against all taxable property of the state.

The four institutions of higher education were all opened within three or four years after their establishment. Each was under the control of a local executive board, under the general supervision of the state board of education. In 1909, the powers of the local executive boards were more closely defined and the state board of education assumed more power. In 1913, the four institutions of higher education were combined into the University of Montana, under the executive control of an officer, titled "chancellor." This officer was appointed in 1915, and opened the chancellor's office in 1916. However, the local executive boards were retained, and still exist, even though their functions were taken from them. In 1933, legislative appropriation for the position of chancellor was discontinued and the office of the chancellor was left in charge of the executive secretary, who had worked in the central office under the chancellor. Still later, the office of the executive secretary became vacant, and an office employe became acting executive secretary. The presidents now serve directly under the state board of education and for matters of common concern the presidents form a council to advise the board.

In 1927, the legislative assembly established Eastern Montana Normal School. This school was located by the state board of education at Billings.

In 1913, the legislative assembly established an agricultural and manual training school in northern Montana, on the Fort Assiniboine reservation, which had been purchased from the federal government. A school, titled Northern Montana College, was established at Havre, in 1929, and was conducted in a high school building until some buildings had been constructed. Whether or not this college was ever established by the legislative assembly may be questioned, since it was not located on the site of the old fort and was not established as an agricultural and manual training school, as provided by law.

There are now six state-supported institutions of higher education in this state of fewer than 600,000 population. A city of that population would do well to support one institution of higher education. There are disadvantages in having so many colleges. Decentralized higher education is expensive to operate, because of duplication, some of which is necessary. Less value is received for the money expended for six separate departments of English, history, French, mathematics, and other subjects, and for two or three departments of home economics, geology, commerce, and other subjects.

Establishment of Junior Colleges:

Further to complicate the situation for higher education in Montana, duplicate systems of higher education are developing. Already three locally supported junior colleges have been established. Others may be established in the future. Soon, the communities having junior colleges will recognize the inequality of local support for their junior colleges, when six other communities of the state can use state colleges for their junior college students which are supported by the state. These communities, very naturally, will demand that the state support their junior colleges. If the legislative assembly accedes to the demands, which will certainly arise, the state will have nine or more colleges to support.

Three possible courses are open to the state:

(1) Junior colleges might be established in every large high school, with about half state aid (say) $80 to $100 per equivalent full-time student, and about half local support, and with local control, as high schools are controlled, under state regulation. All institutions of higher education except one could be abandoned and that one could be an institution for only junior, senior, and graduate students, requiring the completion of the sophomore year of work for admission to the upper division of the college. Either the present state university or the state college would be adequate in physical plant to serve the purpose. The other colleges could be turned over to the communities to be operated by them as junior colleges. Because of its location probably the school of mines would have to remain at Butte as a school of this single institution.

(2) The legislative assembly might repeal the law making possible the establishment of junior colleges and make it illegal for boards of education to expend public moneys for junior college support and make it necessary for the three now in operation to be closed. Then, the six institutions, or most of them, might be continued. This would avoid the double system that is developing.

(3) Matters could be continued as they have begun, and a double system of higher education could be established. This will certainly pile up trouble for the future, which will appear when those in charge of the local junior colleges decide to demand state support to alleviate their double burden of supporting their own junior colleges and of helping to support the first two years of college work for Missoula, Havre, Bozeman, Butte, Billings, and Dillon. They will be justified in their complaint and if enough junior colleges have been established, they will probably exert enough pressure to secure state support. If they are few in numbers, the state may not adopt them, but merely give them financial aid. In either case they will increase the burden of higher education in the state.

The best interests of higher education in Montana would be served if the first alternative were to be adopted and there were to be junior colleges established as a part of secondary education in every large high school of the state, with state aid for their support, and if but one institution for the three years above the junior college level were to be maintained. Of course, it might be difficult to turn over five of the present institutions to local communities for support, above the $100 of state aid per equivalent full-time student. But this should be done in the interests of higher education, in the interests of the taxpayer, and to save the inevitable difficulties of adjusting inequalities in the support of higher education that are piling up for the future.

The second alternative would certainly be preferable to the third, which is bound to cause trouble in the future.

General Control of the Institutions of Higher Education:

State Board of Education: The state constitution provides for the control of institutions of higher education as follows:

> "The general control and supervision of the state educational institutions shall be vested in a state board of education, whose powers and duties shall be prescribed and regulated by law. The said board shall consist of eleven members, the governor, state superintendent of public instruction and attorney general being ex officio, the other eight members thereof shall be appointed by the governor subject to the confirmation of the senate, under the regulations and restrictions to be provided by law." (Sec. 11, Art. XI.)

Chapter 91 of the legislative acts of 1941 proposes an amendment to Section 11 of Article XI of the constitution, to be submitted to the electors of the state at the general election November, 1942. This amendment, if passed, will provide that:

"'Section 11. The general control and supervision of the state university and the various other state educational institutions shall be vested in a state board of education whose powers, duties and terms of office shall be prescribed and regulated by law. The board shall consist of seven members, who shall be appointed by the governor, subject to confirmation by the senate, under regulations and restrictions to be provided by law.'"

This amendment should be passed by the people. A board of eleven members is larger than necessary or even desirable. A board of seven members can transact business with more dispatch than can a larger board. Moreover, this amendment would eliminate the three ex-officio members, which would be highly desirable. The practice of having an executive officer of the board as a member violates sound principles of organization.

The state superintendent of public instruction can still serve as secretary of the board without being a member, or a chief executive of higher education could serve as secretary when the board meets on matters relating to higher education. It makes little difference who serves as secretary, so long as proper minutes are kept, correspondence is properly taken care of, and the agenda for meetings and notification of meetings are adequately made out and mailed to members. It is the attorney general's duty to render opinions to state officers, whether or not he is a member of the state board of education. That is a part of the work for which his salary is paid. The governor should not be a member of a state board of education, even as chairman. As governor of the state, he should not have his hands tied by majority decisions of the board of which he is only one member. This will be particularly true if the board members have long terms of office, as should be the case, for then the governor will not have appointed a majority of the members and, as governor, he should be free to criticize their acts, which might not be the case if he is a member of the board.

Just now, procedures relating to the state board of education are in process of change. The statutes have provided that the eight appointive members shall be equally divided, as to place of residence, between the first and second congressional districts, that they shall be divided among the political parties so that not more than four of the appointive members shall be appointed from any one party, and that their term of office shall be four years.

An amendment to the statutes, Chapter 101 of the laws of 1941, retained the provisions that the appointive board members shall be equally divided between the two congressional districts, as to place of residence, and that not more than four members shall be appointed from one political party, but provided that the eight appointive members shall be appointed for terms of eight years, with the term of one member expiring each year.

The term of office of any member already in office in 1941 when the law went into effect was not affected, and the longer terms will be made effective only with the appointment of new members, except that some shorter terms are permitted by law in order to make the eight-year terms, with one office expiring each year, effective.

The change to longer terms for state board of education members, and to overlapping terms, with one office becoming vacant each year, was advisable in order that continuity of policy may be maintained. It is not well to require by law the division of members equally between the two congressional districts, as to place of residence. It will have a tendency to make the members feel that they represent the interests of the people of their congressional district instead of the interests of the people of the state. Congressional districts should not be a basis for dividing the board any more than should cities and country, mountains and prairie, capital and labor, or any other artificial division that has nothing to do with higher education. Members of the state board of education should be appointed at large, as representatives of all of the people of the state.

The provision that not more than four appointive members shall be members of any one political party is undesirable. The provision guarantees minority political representation, but there is no need for political control to be exercised in a state board of education. The provision not only guarantees minority political representation but also assumes that there will be majority political control. Members of a state board of education should be appointed for their interest in effective, economical higher education and without regard to political affiliation. There should be no patronage or other political benefits in membership on a state board of education. The provision that not more than four members of the state board of education shall belong to one political party should be repealed.

The law provides that a majority of the members constitute a quorum, that regular meetings shall be held the second Monday in April, July, September, and December, and that special meetings may be held. Members receive no compensation but are allowed reimbursement for actual expenses incurred while in attendance at meetings.

Among the powers and duties, relating to the control of higher education, specified by law, are that the board: shall have "control and supervision" of the several institutions of higher

education; shall adopt rules and regulations for its own government and for the exercise of the powers conferred on it by law and for the government of the state educational institutions; shall grant diplomas to graduates of institutions of higher education and honorary degrees, in both cases on the recommendation of faculties; shall keep records of proceedings; shall use an official seal; shall make an annual report (which is not done); shall have, when not otherwise provided by law, control of all books, records, buildings, grounds, and other property of the institutions of higher education; shall receive from the state board of land commissioners or other boards or persons, or the government of the United States, all funds, incomes, and other property to which the institutions of higher education are entitled; shall choose and appoint a president and faculty for each state institution and fix their compensation; and shall confer upon the executive board of each institution such "authority relative to the immediate control and management, other than financial, and the selection of the faculties, teachers, and employes, as may be deemed expedient."

Local Executive Boards: Local executive boards are still being appointed for each of the institutions of higher education under the following provision of law:

> "There shall be an executive board, consisting of three members, for each of said institutions named in the preceding section, two of whom shall be appointed by the governor by and with the advice and consent of the state board of education, and the president of such institution shall be ex officio member of said board. At least two of said members shall reside in the county where such institution is located. Said executive board shall have such immediate direction and control, other than financial, of the affairs of such institution as may be conferred on such board by the state board of education, subject always to the supervision and control of the state board."

In each case the president of the institution is chairman of the local executive board and the board elects a secretary who may or may not be a member of the board. The appointive members hold office for terms of four years and are subject to removal by the governor or by the state board of education. They are required to meet once each quarter and monthly if the business of the institution requires it. The appointive members receive compensation as fixed by the state board of education, to a limit of $5 a day and $125 a year and expenses. The state board of education itself receives no compensation for its services.

The local executive boards are like vestigial appendages; they once had a useful function but at present they merely exist without purpose. It is said they approve bills, but this is not a useful function, for the appointive members know less about the purchase of materials and the expenditures of money for the institutions than do the members of the state board of education. The

Approval and recording of requisitions for purchase, and their delivery to the purchasing agent.
Checking of claims against claim lists.
Checking of pay rolls against an index of staff salaries, recording of warrants, and sending them to the units.
Issuance of authorizations for travel.
Recording of diplomas and certificates, and affixing a signature.
Receiving and transmitting some of the communications from university officers to various state officers.
Custodianship of two student loan funds - keeping accounts, collecting notes, and compiling reports on loan funds.
Mimeographing of recommendations of the presidents of the units of the university and sending them to the members of the board.
Making of contracts for all staff members of the several units.
Serving as secretary to the executive council, consisting of the presidents of the institutions.
Recording of scholarship awards to high school honor students.
Keeping of a card index of all graduates of the institutions.
Keeping of a card index of all staff members of the institutions.
Attendance upon hearings of legislative committees and informing the presidents of the institutions as to the status of legislation.

This is about all that remains of the once powerful chancellor's office. The executive council, consisting of the presidents of the institutions that used to meet with the chancellor, now advises the board directly. This, in spite of the especially well-qualified and sincere men who are presidents of the institutions, is very inadequate executive control because (1) the presidents cannot take a disinterested view of educational situations that affect their institutions, and (2) professional courtesy requires that they do not raise too serious objections to the requests of a colleague.

Much of the influence exerted by the chancellor has been for the benefit of the state. The extent of his influence has depended upon the qualifications and ability of the person holding the office. He has not always acted wisely, but his influence for the advantage of higher education, and often for its economical operation, is still conspicuous in the work of the institutions. Though there is some unjustifiable duplication in the curricula of the institutions, it is less than in most states, and some that exists has developed since 1933, when the office of the chancellor was discontinued.

One of the principal advantages derived from the system of control of the University of Montana was that it freed the chief executives of the several institutions to administer their institutions without the necessity of the presentation of requests for appropriations to the legislature and without the necessity for political lobbying. The institutions were all represented by the chancellor before legislative committees and the state board of education.

The system, however, was not perfect. The institutions were still operated as separate institutions and there was not perfect articulation of their work. As examples, (1) there has always been some unjustifiable duplication in the curricula, (2) staff members have never been shifted freely, and scarcely at all, from one location to another, as can be done frequently if the units are a single institution, (3) there has been no common salary schedule for instructors at the several locations, and (4) there has been some unnecessary duplication of expenditures for administration in the several institutions. A better system than that provided by statute, and formerly existing, should be established.

Proposal for Consolidation of the Institutions of Higher Education Under Unified Administrative Control: It is proposed that the six institutions of higher education be consolidated into a single University of Montana, along lines similar to the University of California, which is located on six campuses. The plan would be as follows:

1. One president would be appointed for the consolidated university, with an office at either Bozeman or Missoula, and with a travel allowance that will enable him to spend considerable time on the other five campuses. He would be the chief executive officer in charge of higher education, and directly responsible to the state board of education.

2. The units at Butte, Dillon, Havre, and Billings would be operated by deans, under the direction of the president.

3. The two larger centers would be under the immediate direction of vice presidents (or the positions might be designated as provosts, as in the two principal units of the University of California), who would be in charge of their respective institutions and to whom the deans would be directly responsible.

4. The president of the consolidated University of Montana would take over the records of the office of the University of Montana now located at Helena.

5. There would be a single business office and a single registrar's office at the unit at which the president maintains his office, but there would be assistants in the other units to register students, collect fees, and look after the necessary business interests of the university.

6. There would be one university library, in the six units, and interchange of books to the extent desirable among the six units.

7. There might well be a consolidated college catalog, a consolidated curriculum, a common system of numbering courses, and a common system of semester or quarter organization. (These should be done, whether or not the University of Montana becomes a unified institution.)

8. There might well be a common set of college business, academic record, student health, student activity, and other forms, many of which could be used by all of the institutions. (This should be accomplished whether or not there is consolidation of the institutions. Now, each institution has different forms and some do not use certain necessary forms at all. For example, Eastern Montana State Normal School does not use printed transcript blanks, which are among the most essential of forms for protection against fraud.)

9. If advantageous, and when advantageous, there would be shifting of students from one to another unit. For example, it might be found to be economical to instruct mining engineering students for one year, or possibly for two years, in general engineering at the state college, and then to shift them to the school of mines at Butte to complete their work in the last three or two years of their college course.

10. Members of staffs would be shifted freely from one to another university unit, consistent with needs in various units and with convenience of change of residence for faculty members.

11. A consolidated report for all units would be prepared by the president of the University of Montana.

Geographical Extent of Services Rendered by the Institutions of Higher Education:

Most of the institutions of higher education draw students from a wide area of the state. This is largely due to the fact that the population of the state is scattered over a broad area and few people live near the institutions. It is due, in part, to the fact that there has been some specialization in the institutions. The percentage of students, of the regular session of 1940-1941, who came from homes within given distances of the institution they attend, may be shown as follows:

Distances of Homes of Students from Institution	M.S.U.*	M.S.C.	M.S.M.	N.M.C.	E.M.S.* N.S.	M.S. N.C.	Total
Within 10 miles	25.6	14.2	45.4	22.9	25.8	17.7	22.5
From 10 to 50 miles	2.5	5.1	7.7	11.7	6.2	4.2	4.8
From 50 to 100 miles	21.3	6.4	4.3	11.7	17.0	14.6	13.9
Over 100 miles	50.6	74.3	42.6	53.7	51.0	63.5	58.8

* Data are for 1939-1940.

Key:
- M.S.U. Montana State University
- M.S.C. Montana State College
- M.S.M. Montana School of Mines
- N.M.C. Northern Montana College
- E.M.S.N.S. Eastern Montana State Normal School
- M.S.N.C. Montana State Normal College

More than half of the students in all of the state institutions of higher education live more than 100 miles from the institution they attend. The most local institution is the Montana School of Mines, due to the fact that it is well located in the largest city of the state, and the city in which interest in mining is predominant. The institution whose students are spread most widely throughout the state is the Montana State College, one of the larger institutions, and located in a small city.

Some of the institutions have a considerable proportion of students from other states and countries. For the regular session of 1940-1941, the number and percentage of out-of-state students was as follows:

Institution	Number	Percent
M.S.M.	68	19.3
M.S.U. (a)	192	8.7
E.M.S.N.S.(a)	30	8.5
M.S.C.	80	4.5
N.M.C.	10	2.0
M.S.N.C.	2	0.8
Total and average	382	7.0

(a) Data are for 1939-1940.

Enrollment of residents of other states is considerably greater in the short summer sessions than in the regular sessions. This is partly due to the fact that no special fee is charged non-resident students for summer session attendance as is done for attendance at the regular session and also to the fact that teachers from other states sometimes prefer to attend summer school in a northern state of high altitude to attending summer school in their own state.

Changes in Enrollment:

The changes in regular session enrollment in the state institutions of higher education for the last 12 years may be shown as follows:

Year	M.S.U.	M.S.C.	M.S.M.	N.M.C.	E.M.S. N.S.	M.S. N.C.	Total
1930-1931	1,575	1,204	216	188	326	454	3,963
1933-1934	1,611	1,034	252	381	446	448	4,172
1936-1937	2,256	1,338	296	432	313	326	4,961
1939-1940	2,196	1,801	350	472	353	280	5,452
1940-1941	2,036	1,775	353	507	311	266	5,248
1941-1942 (fall only)	1,508	1,730	293	402	227	191	4,351

The percent of increase from 1930-1931 to 1939-1940, and the percent of decrease from total enrollment of 1939-1940, to the enrollment for the first term of 1941-1942, may be shown as follows:

Institution	Percent of Increase 1930-1931 to 1939-1940	Percent of Decrease, Total, 1939-1940 to First Term 1940-1941
N.M.C.	148.9	14.8
M.S.M.	62.0	16.3
M.S.C.	49.6	3.9
M.S.U.	39.4	31.3
E.M.S.N.S.	8.3	35.7
M.S.N.C.	(38.3) decrease	31.8
All institutions	37.6	20.2

It should be stated that the percentage of loss in the last two years is overemphasized in all of the institutions, due to the fact that the total enrollment of 1939-1940 has been compared with the fall enrollment, only, for 1941-1942. More students will be enrolled in each of the institutions before the close of the present college year. However, enrollment in all of the institutions, as of November 1, 1941, was 11 percent below enrollment as of November 1, 1940, and there was a considerable loss the preceding year, which is included in the figures shown for decrease of enrollment.

The data presented may be used as the basis for a number of conclusions and much speculation, little of which will be stated here. The most obvious and probably the most important conclusion is that the state college has had the most rapid recent growth in numbers of students and, with two exceptions, in percentage of growth, and has had the least decline of enrollment in the last two years of any of the institutions. It is mere speculation to attempt to project enrollment figures into the future, under present conditions. That there will be further decline of enrollment in all of the institutions is probable. However, the enrollment in the teachers college is now so low that there may be a slight increase in each of them.

Proportion of State Income Expended for Public Higher Education:

The measure of the effort a state makes to support state institutions of higher education is the percent that the total of expenditures for the support of these educational institutions is of the total of individual incomes in the state. A publication of the National Education Association for February, 1941, entitled "State Comparisons of School Support" presents data from which the percent that current expenditures for the support of state institutions of higher education are of total individual incomes may be computed. The data are as follows:

State	Income Payments to Individuals 1938	Expenditures for State Supported Higher Education 1937-1938	Percent Expenditures are of Income
United States	$66,259,000,000	$331,308,706	0.50
Colorado	554,000,000	5,883,495	1.62
New Mexico	163,000,000	2,531,008	1.55
Arizona	221,000,000	3,219,253	1.46
North Dakota	209,000,000	2,663,915	1.27
Utah	242,000,000	2,927,215	1.21
Nebraska	526,000,000	6,239,805	1.18
Idaho	221,000,000	2,459,400	1.11
Kansas	733,000,000	7,219,152	0.98
South Dakota	223,000,000	2,152,011	0.97
Montana	279,000,000	2,641,316	0.95
Oregon	557,000,000	4,979,581	0.89
Wyoming	142,000,000	1,244,658	0.88
Nevada	80,000,000	702,848	0.88
Washington	981,000,000	7,251,615	0.74
California	4,856,000,000	25,680,227	0.53
Median			0.98

Montana expended just a little less in 1937-1938 than the median of western states for support of its institutions of higher education. With the increased mill levy this year, earmarked for institutions of higher education, it is likely that the effort put forth by Montana to support higher education will place it above the average of the western states.

Proportion of the Cost of Public Education Devoted to Higher Education:

From the publication "State Comparisons of School Support" to which reference has already been made, data are presented which show the proportion of the total expenditures for public education in western states that is devoted to higher education. These comparisons for 1937-1938 follow:

State	Total Expenditures for All Public Education	Total Expenditures for Higher Education	Percent of Expenditures Devoted to Higher Education
United States	$2,564,418,760	$331,308,706	12.9
Arizona	12,993,109	3,219,253	24.8
Nebraska	25,536,536	6,239,805	24.4
Colorado	26,228,257	5,883,495	22.4
New Mexico	11,305,420	2,531,008	22.4
Oregon	22,631,922	4,970,581	22.0
Nevada	3,307,857	702,848	21.2
Utah	14,123,703	2,927,215	20.7
North Dakota	12,989,693	2,663,915	20.5
Idaho	12,506,419	2,459,400	19.7
Kansas	38,303,805	7,219,152	18.8
Washington	38,796,893	7,251,615	18.7
Montana	14,409,126	2,641,316	18.3
Wyoming	7,430,938	1,244,658	16.7
South Dakota	13,983,726	2,152,011	15.4
California	195,045,397	25,680,227	13.2
Median			20.5

While only 12.9 percent of money expended for public education in the United States was expended for higher education, in 1937-1938, the median for the western states was 20.5 percent. Montana expended 18.3 percent of moneys used for the support of public education for the support of higher education. Thus Montana devoted a larger proportion of local and state moneys expended for public education to the support of public schools and a smaller proportion to the support of higher education than is true of most of the western states.

Classification of Students:

The distribution of enrolled students among the several classes or grades in the state institutions of higher education in Montana for the regular session of 1939-1940 may be compared as follows:

Institution	Number of Students in Each Class					
	Special and Unclassified	Freshman	Sophomore	Junior	Senior	Graduate
M.S.U.	104	531	465	367	477	92 (a)
M.S.M.	2	120	91	66	56	20
M.S.C.	-	677	507	303	239	49
M.S.N.C.	1	112	90	41	22	-
E.M.S.N.S.	-	156	151	4	-	-
N.M.C.	25	302	180	-	-	-
Total	132	1,898	1,484	781	794	161

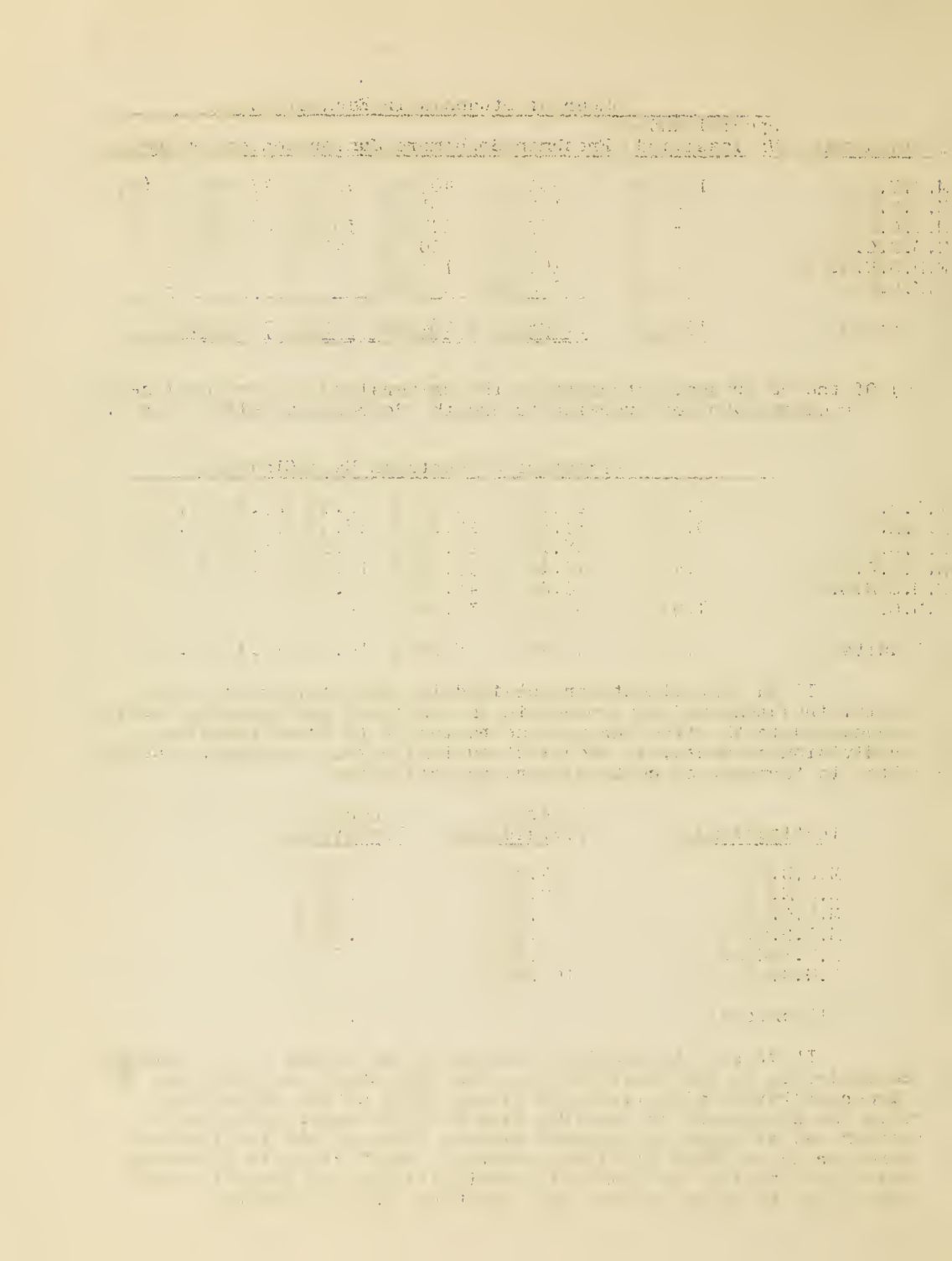
(a) Of the 92 graduate students in the university, 29 were college graduates who were working toward the degree, bachelor of laws.

	Percent of Students in Each Class					
M.S.U.	5.1	26.1	22.8	18.0	23.5	4.5
M.S.M.	0.6	33.8	25.6	18.6	15.8	5.6
M.S.C.	-	38.1	28.6	17.1	13.5	2.7
M.S.N.C.	0.4	42.1	33.8	15.4	8.3	-
E.M.S.N.S.	-	50.2	48.5	1.3	-	-
N.M.C.	4.9	59.6	35.5	-	-	-
All units	2.5	36.2	28.2	14.9	15.1	3.1

If the enrollments are divided into two groups, with specials, freshmen, and sophomores in one group and juniors, seniors, and graduates in the other group, the ratios of lower division to upper division students, in each institution, may be observed. The results, in terms of percentages, are as follows:

Institution	Lower Division	Upper Division
M.S.U.	54.0	46.0
M.S.M.	60.0	40.0
M.S.C.	66.7	33.3
M.S.N.C.	76.3	23.7
E.M.S.N.S.	98.7	1.3
N.M.C.	100.0	-
All units	66.9	33.1

It will be observed that about two thirds of all enrolled students are in the lower division and that about one third are in the upper division and graduate class. This is not as serious, from the standpoint of creating high cost for upper division instruction, as might be supposed because three of the institutions have few or no upper division students. Until there is increased enrollment in the institutions, upper division and graduate work should not be given in more than three of the institutions.



Provisions by the State for the Several Functions of Higher Education:

Organization of Higher Education by Functions: The primary purposes of institutions of higher education are only (1) to furnish instruction and promote learning and (2) to conduct research for the purpose of discovering new truths in the several fields of learning. The administration of institutions of higher education, the operation and maintenance of their physical plants, their maintenance of auxiliary activities and the activities of students should be for, and subordinate to, the main purposes of the institution. Education is a broad term and, above the high school level, has a number of purposes that can be classified as instruction or research. The functions or purposes of institutions of higher education may be considered to be the following:

Higher Vocational Education: Education for vocations, in the form of terminal curricula, given at the junior college level, may be considered to be higher vocational education. Higher vocational education falls short of professional education in that less time is devoted to the study of the vocation, and the depth and breadth of vocational experiences are short of what is required for learning a profession.

General Cultural Education: General cultural education is a continuing, through the first two years of college, of the broadening type of educational experiences. It is distinctly advanced secondary education.

Advanced Cultural Education: What may be termed advanced cultural education is the concentration upon one or two major academic fields of study in the last two years of a college curriculum.

Teacher Education: The preparation of teachers for all sorts of public school positions is a combination of advanced cultural education, or general cultural education, and of professional education.

Professional Education: Education for the professions is given in the latter years of college and above the college undergraduate level. The courses studied in the first two college years may be designated as preprofessional.

Graduate Education: Graduate education is that education given above the college level or above the first professional degree.

Research: The research function of higher education may be considered to include both organized research as conducted by the division of agriculture, of the state college, and by the bureau of mines and geology, and also voluntary and unorganized research as carried on by a few individuals in several of the institutions.

Extension Study: Extension study includes extension class and correspondence study given by the state university and the smaller colleges and the program of agricultural extension conducted by the state college.

It should be noted that this is a very general classification of functions and that each function can be subdivided into other classification groups. Consideration will be given to the provisions made by the six institutions of higher education for fulfilling each of these functions.

Higher Vocational Education: Vocational education, such as carpentry, cabinet making, auto mechanics, sheet metal work, electricity, printing, and the like, when taught in school, is usually taught in high school. In recent years, junior colleges have been established, and many of them include terminal vocational curricula, often including technical and managerial aspects of the occupations, as well as manipulative skills. Also, there are certain vocational curricula that have been taught very poorly in high schools, and that are more suitable for learning by students of greater ability or more maturity than are possessed by the average high school pupil, such as students who have been selected by high school graduation to qualify for admission to junior college.

What is here termed higher vocational education is advanced education in the more highly skilled trades and in the lower technical occupations, and is taken after high school graduation. It is not preparatory for advanced study of occupations, but is preparation for entering occupations, directly, and is, therefore, terminal so far as formal education for entering the occupation is concerned.

Among possible terminal vocational curricula would be such subjects as farming, home making, institutional management, dietetics, tailoring, merchandising, salesmanship, advertising, accounting and auditing, stenography, automobile and truck mechanics, aviation mechanics, aviation piloting, electricity, stationary engineering, machine shop foremanship, forging and welding, pattern shop practice, refrigeration and air conditioning, building construction, ceramics, photography, linotype operation and printing, journalism, police training, and the like. Teacher training for the elementary schools will be considered under a separate heading.

Some of the occupations mentioned would not be suitable for any of the state colleges in Montana because so few persons of high training in the occupations would be needed in the state. Some of the vocations are sometimes offered in high school, but it is assumed that training at the junior college level will produce more efficiently trained workmen than can be produced in the high schools. For example, the junior college study of electricity should produce individuals who have knowledge of electricity above that of an electrician, but short of that of an electrical engineer. The study of stationary engineering should qualify a person to operate a high pressure boiler but his knowledge of mechanics would still be short of that of a mechanical engineer.

Because of population limitations, Montana cannot offer a wide variety of higher vocational curricula. At present, the only unit of the University of Montana that offers terminal, two-year college vocational curricula is Northern Montana College and it offers only two of these, namely: medical secretaryship and secretarial science. Other curricula offered by this college are offered as either preprofessional curricula, or the first two years of professional curricula. They are not intended to be terminal curricula, though formal study of the students is usually terminated with or prior to the completion of a two-year curriculum.

It may be concluded that Montana makes almost no provision for what may be designated as higher vocational training. When the state can afford the expense incident to conversion of an institution, and for the maintenance of an institution that will render more service, it would be advisable to (1) convert one of the normal schools into a two-year junior college, with emphasis upon higher vocational education, and (2) establish some terminal vocational curricula in Northern Montana College.

The state college offers short courses to farm boys, as a part of its extension program, but these are not truly higher vocational education, because the students are not all of college grade and the courses are brief and do not constitute a planned curriculum program. The division of agriculture, of the state college, might very well offer a two-year curriculum in general agriculture for boys who do not expect to become county agricultural agents or high school teachers of agriculture, but who expect to remain on the farm or ranch.

The division of engineering of the state college might, also, offer two years of work in general engineering, for students who are mechanically inclined but who are incapable of learning higher mathematics, advanced science, and the more technical parts of engineering.

The advisability of establishing two-year curricula in agriculture and engineering in the state college should be carefully considered. Probably home economics should also be included in such consideration.

General Cultural Education: General cultural education has been rather clearly defined in recent years as the education secured in the academic curricula of junior colleges and the first two years of colleges and universities. It is a continuation of the broadening type of education and, therefore, is an extension of secondary education. In it there is neither academic nor professional specialization. It has exactly the same purposes as high school education. It introduces the student to broad surveys of parts of civilization, but does not carry him far into any one field.

Statistics can be given for the number of freshmen and sophomores in the state institutions of higher education, but some

of these students have begun to specialize, so that it is difficult to determine the number that are extending their secondary education through the first two years of college in what is termed general education or, more properly, general cultural education.

The regular session enrollment in the first two college years, in 1940-1941, has been presented for each of the institutions in a previous table. Briefly, in all of the institutions, there were 1,898 freshmen and 1,484 sophomores, or 3,382 students of junior division grade. A considerable number of the sophomores and some of the freshmen were engaged, at least a part of the time, in the study of professional courses in agriculture, engineering, education, and other subjects and, thus, had already begun their specialization, yet even these were taking some general cultural courses, which had little bearing upon the occupations for which they were beginning to prepare.

Advanced Cultural Education: Students, usually, select subjects for majors and minors, if they are pursuing a liberal arts college curriculum, for concentrated study, such selection being made at the midpoint of their college career, or at the beginning of the junior year of college. Specialization in nonvocational fields, wherever begun, may be designated as advanced cultural education. The work is taken only by such students as do not begin professional curricula until after they have completed college. Advanced cultural education may be considered to be the last two years of a liberal arts curriculum. During the depression years this work was popular throughout the colleges of the United States. Now, vocational and professional work is taking its place for many students.

Last year, there were a total of 1,575 juniors and seniors in all of the state institutions of higher education in the state, but most of them were enrolled in professional schools rather than in liberal arts curricula. Whatever liberal arts education they were gaining was incidental to preparation for a vocation and consisted of only a few scattered courses.

Enrollments in the two upper years of college are small. Specializing work is costly, particularly if enrollments are small. A large program of subjects for specialization in the upper years of college, together with the small enrollment in the upper division, is what causes small classes and, consequently, high costs of instruction of upperclass students. Several of the subjects offered for major study in the two upper years of college should be taught as majors in only one of the institutions and students should enroll in the one institution in which the curriculum they desire is offered. Also, the number of departments offering work for majors in the state university might well be reduced. Some of them should be consolidated into single departments, as history and political science have been consolidated in the university.

Teacher Education: Five of the six state institutions of higher education train teachers, though there is some division of the work among them. The amount of duplication in the training of teachers may be shown as follows:

Kinds of Teachers Trained	State Institutions That Train Teachers				
	M.S.U.	M.S.C.	N.M.C.	E.M.S. N.S.	M.S. N.C.
Rural (one room)			x	x	x
Kindergarten					x
Elementary					
Primary			x	x	x
Intermediate			x	x	x
Junior high or departmental elementary (grades 6 to 9)	x		x	x	x
Senior high					
Academic subjects (a)	x	x			
Commerce	x	x			
Music	x				
Art	x	x			
Home economics (Smith-Hughes)	x	x			
Agriculture (Smith-Hughes)		x			
Physical education	x	x			
Speech	x				
Principal	x				
Supervisor	x				
Superintendent	x				

(a) English, French, mathematics, chemistry, biology, history, etc. constitute academic subjects. Teachers are being prepared in many academic subjects in the state university but in only four or five academic subjects, as minors or second teaching subjects, in the state college.

Elementary teachers are trained in three of the smaller colleges, in two-year curricula and, in one of these colleges, in four-year curricula, also. This is all needless duplication. A few years ago more elementary school teachers were trained in one of these institutions than are now being trained in all three of them. There is little that can be done about the unnecessary duplication, short of either closing one or two of the institutions, or of changing the character of their work so as to make them true junior colleges, and they should be made junior colleges when the state can afford to convert them.

There is even more duplication in the training of teachers for junior high school and departmental elementary teaching in grades 6 to 9. Here, both the state university and the three colleges train teachers. Training for subject teaching, in the junior high schools or grammar grades, should be done at the state university

only. Training for the sixth, seventh, and eighth grades should be done by the colleges only for rural and other nondepartmentalized schools.

There is lack of control by the office of the state superintendent of public instruction of both the training and the certification of teachers. Each training institution issues certificates to teachers. This situation should be corrected by centralizing the certification of teachers in the office of the state superintendent of public instruction and withdrawing such privileges from the institutions of higher education.

The institutions, very fortunately, have not established training schools for the state to support. In one case the state contributes considerable money to the support of a public school, which is used for training school purposes. The amount of the contribution should be greatly reduced. In other cases, public high school teachers are employed as critic teachers, at as many different rates as there are different colleges. The rates should be standardized. Because of limitations in practice teaching facilities in some of the smaller communities where colleges are located, it would be well if critic teachers were to have special certification by the state superintendent of public instruction and were to be selected, not only in the college towns, but wherever in the state master teachers are employed.

Professional Education: Professional education, other than the education of teachers, is given in the state university, the state college, and the school of mines. The provisions made for professional education and the number of professional students in the curricula may be shown as follows:

Profession	Institution	Regular Session Enrollment 1940-1941
Law	M.S.U. School of law	80
Pharmacy	M.S.U. School of pharmacy	54
Journalism	M.S.U. School of journalism	118
Business administration	M.S.U. School of business administration	281 (a)
Secretarial science	M.S.U. School of business administration	
Secretarial science	M.S.C. Division of household and industrial arts	182
Home economics	M.S.U. College of arts and sciences	104
	M.S.C. Division of household and industrial arts	232

Profession	Institution	Regular Session Enrollment 1940-1941
Nursing	M.S.U. College of arts and sciences	(b)
	M.S.C. Division of science	(b)
Medical technology	M.S.U. College of arts and sciences	(b)
Wild life technology	M.S.U. College of arts and sciences	(b)
Forestry	M.S.U. School of forestry	170
Music	M.S.U. School of music	82
Applied art	M.S.C. Division of household and industrial art	39
Engineering Mining Metallurgical Geological	Montana school of mines	325
Geology (major)	M.S.U. College of arts and sciences	10
Engineering Mechanical Industrial Physics Electrical Chemical Civil Architecture	M.S.C. School of engineering	513
Industrial chemistry	M.S.C. Division of science	(b)
Agriculture General Economics Agronomy Horticulture Animal industry Range management Dairy production Dairy manufacture	M.S.C. School of agriculture	281

(a) Data for first quarter 1941-1942.

(b) Data are not at hand.

Pharmacy was taught, last year, to only 54 students in a four-year curriculum. Only 11 students received degrees in pharmacy. The cost of education of pharmacy students was nearly $900 a year, per equivalent full-time student. It should be remembered that pharmacy students take much of their work in the college of arts and sciences. This cost figure is based upon the actual amount of work

taught in pharmacy, in terms of students taught, when reduced to a full-time basis. The training of pharmacists is exceedingly costly to the state.

Pharmacy is taught in the University of Washington and in the University of Colorado. It is not taught in the University of Idaho, the University of North Dakota, the University of South Dakota, or the University of Wyoming. It is recommended that the teaching of pharmacy be discontinued at Montana State University and that the state pay any nonresident fees for students of pharmacy from Montana who attend the state universities in Washington or Colorado.

Secretarial science, on the four-year level, is duplicated in Montana State University and Montana State College. It should be discontinued at the state college. The work is inexpensive and is used there, to some extent, as a curriculum for students who do not do acceptable work in other curricula. These may be used as arguments for the retention of the work at the state college. Nevertheless, the recommendation is made in spite of these facts. A two-year general engineering and general agriculture curriculum can be provided for students who cannot do well in the regular curricula. The school of business administration of the university should give all four-year work in business administration and secretarial science in order to strengthen the work at the university by combining the expenditures for that type of work in one institution, or at least making a part of the money used at the state college for teaching secretarial science available to the university.

Home economics is unjustifiably duplicated in the state university and the state college in that both institutions offer the work for bachelors and for master's degrees, and both fulfill the rigid requirements for training Smith-Hughes high school teachers of home economics. It is recommended that home economics be given only as a minor in Montana State University and that it be given as major work only in Montana State College, and that high school home economics teachers be trained only in the state college.

Geology, as a major, should be discontinued at the state university and should be given only at the school of mines.

Graduate Education: Graduate education is given in the following subjects in three of the state institutions of higher education. The work given may be outlined as follows:

Institution and Subject		Graduate Students Regular Session 1940-1941
Montana State University		63*
Bacteriology and hygiene		
Botany		
Physical education		
Psychology and philosophy		
Zoology		
Classical languages		
English		
Fine arts		
Modern languages		
Chemistry		
Geology		
Home economics		
Mathematics		
Physics		
Economics and sociology		
History and political science		
Business administration		
Education		
Forestry		
Journalism		
Music		
Pharmacy		
Montana State College		49
Agriculture	15	
Economics		
Education		
Agronomy		
Horticulture		
Animal industry		
Dairy industry		
Engineering	2	
Mechanical		
Industrial		
Physics		
Electrical		
Chemical		
Civil		
Science	16	
Botany and bacteriology		
Chemistry		
Entomology		
Industrial chemistry		
Zoology		
Home economics)	16	
Applied art)		

*There were 29 students in the school of law who held bachelor's degrees.

Institution and Subject	Graduate Students Regular Session 1940-1941
Montana School of Mines	20
Mining engineering	
Geological engineering	
Metallurgical engineering	
Mineral dressing	

The school of mines and the state college do not hold summer sessions. The state university had, in the summer of 1941, a total of 266 graduate students.

In 1940-1941, no graduate students were registered at the state university in journalism, geology, botany, physics, psychology and philosophy, and fine arts. Only two students were registered for graduate work in all of the engineering departments of the state college.

Last year, 10 master's degrees were conferred by the state university, of which two were conferred after the regular session and eight were conferred after the summer session; 10 master's degrees were conferred by the school of mines; and 14 master's degrees were conferred by the state college, making 34 master's degrees conferred from the three institutions. The state college and the school of mines confer the master's degree only at the close of the regular session.

There is duplication in graduate work given by the state university and the state college in the fields of botany, bacteriology, zoology, chemistry, home economics, and art. Also, this year the state college has begun to give work for the master's degree in mathematics. It is recommended that graduate work in fine arts, home economics, mathematics, and physics be discontinued from the state university, and that graduate work in botany, bacteriology, and zoology be discontinued at the state college.

Research: The types of work, of faculty members, involving search and compilation, classification and organization, and experiment, which in combination lead to discoveries, collectively are termed "research." Research in universities in the United States and in the world has contributed much to the subject matter of instruction in agriculture, chemistry, biology, anthropology, medicine, education, economics, sociology, and other fields of learning.

Organized faculty research is carried on in agriculture at the state college, and in subjects related to agriculture, such as chemistry, bacteriology, botany, entomology, economics, and home economics. An agricultural experiment station at the college and branch stations at various other places in the state are maintained for use in research. An engineering experiment station has been established at the college, but it has never had any money with which to conduct research in engineering. The difficulty with the

research in chemistry and other fields at the state college is that it must be related to agriculture and this imposes limitations upon it so far as the subjects are concerned.

Research in mining and geology are conducted at the school of mines, with an annual appropriation of $9,200 for the Montana bureau of mines and geology. The state university expends no state funds for research and receives but little of private funds for that purpose. One of the principal fields of research in the state university is geology research. Furthermore, the department of geology of the state university identifies minerals, rocks, and ores free of charge to citizens of the state, and has done so for 25 years. This service is the same as is rendered by the bureau of mines and geology at the school of mines. The department of geology of the college of arts and sciences of the state university should be transferred, instruction and research, to the school of mines. There is no need in the state university for more than one or two general courses in geology, taught merely for their cultural value, as a minor subject. Major work in the subject of geology should be done only in the school of mines.

Research is carried on, to some extent, in all of the institutions on the initiative of a very few individual faculty members, in the form of unorganized, and unfinanced, research. However, there have been very few research studies conducted by individual faculty members beyond the studies they made in securing their doctorate. Not more than a dozen faculty members in all of the institutions are actively engaged in what may properly be called research, on their own initiative.

In the reports on the state university, the state college, and the school of mines, certain recommendations were made concerning the granting of more financial support for research, the securing of private funds for research, and the arrangement of time of the more capable faculty members for research. These recommendations will not be repeated in this report.

Extension Instruction: Instruction by extension is usually considered to be a function of a university. In Montana, extension instruction is conducted by the following institutions:

Montana State College
- Montana Agricultural Extension Service
  - County agricultural and home demonstration agents
  - Field work by agricultural and home economics specialists
  - 4-H club work with young people
  - Short courses, etc.
- No general extension work

Montana State University
- Public Service Division
  - Classes
  - Correspondence study

School of Mines
- None

Montana State Normal College
Correspondence study

Northern Montana College
Correspondence study

Eastern Montana State Normal School
Classes
Correspondence study

All extension classes were taught at the college level. Enrollment in general extension class and correspondence study of the four institutions giving extension work, in 1940-1941, was as follows:

	Class	Correspondence
Montana State University	244	648
Montana State Normal College	-	100
Northern Montana College	-	18
Eastern Montana State Normal School	*	11
		777

*Data for the number of students enrolled in five classes are not at hand.

Considering the whole problem of extension instruction, it is recommended:

That evening classes be taught by the smaller colleges in the local college buildings, as a part of the regular work of the institutions, as a part of the regular teaching loads of instructors, and without extra remuneration.

That only the university give general extension work, away from the campus, and that it be further developed by the university.

That the state university give all college correspondence work for the state and that it be discontinued from the three colleges.

That correspondence work be given as a part of the regular teaching loads of instructors and that no additional remuneration be received by instructors for the work.

Curriculum Duplication:

There is much duplication in the curricula of the institutions of higher education. Much of this duplication is necessary because certain basic courses must be given in all institutions. Because of necessary duplication a system of six institutions can never be operated as economically or as effectively as a single

large institution of equal enrollment, regardless of how carefully the work of the institutions is organized. Such courses as English, history, biology, and physical education must be taught, in some amount, in all colleges. In some subjects, such as French, library science, and even physics and bacteriology, the division of the work among the colleges increases the cost of instruction per student because they require a greater number of classes that have smaller enrollments than would be the case if they were taught at only one place.

The relative sizes of departments, in the several institutions may be compared in terms of the number of equivalent full-time students in each. The number of equivalent full-time students is the number of credit hours taught in each department of each institution, divided by the number of credit hours carried by the average student, who completes his college course in four years. Because of different organization in the several institutions, such as a combined department of botany and bacteriology in the state college and a combined department of mathematics and physics in the school of mines, it has been necessary to combine certain departments in some of the institutions. The comparison, for 1940-1941, may be shown as follows:

	Number of Equivalent Full-Time Students					
Department	M.S.U.	M.S.C.	M.S.M.	M.S. N.C.	E.M.S. N.S.	N.M.C.
Classical languages	56					
Modern languages	122	49	9	2		14
English	171	136	24	50	49	79
Library science	6					1
Orientation						9
Social science				39	44	75
Economics and sociology	129					
History and political science	140	50				
History and economics			23			
Religion	1	3				
Geography				7		
Biology						25
Zoology	74	64				
Botany and bacteriology	99	76				
Entomology		12				
Chemistry	95	191	53			30
Science				17	27	
Mathematics and physics	100	195	82	12		49
Art	21	60		15	23	9
Music	71	19		14	21	11
Physical education	65	52	2	10	18	11
Military science	*	41				
Education and psychology	118	37		46	90	71
Business administration and secretarial science	131	47				54

*Data not furnished.

	Number of Equivalent Full-Time Students					
	M.S.U.	M.S.C.	M.S.M.	M.S. N.C.	E.M.S. N.S.	N.M.C.
Journalism	41					
Home economics	48	115				
Pharmacy	21					
Forestry	92					
Law	66					
Nursing education	*	11				
Industrial art				9		
Drawing and engineering						10
Engineering						
General		42				
Mechanical		59				
Industrial		17				
Electrical		33				
Irrigation and drainage		3				
Architecture		19				
Civil		25				
Chemical		13				
Mechanics			12			
Mining and surveying			38			
Metallurgy			31			
Mineral dressing			11			
Geology	21		44			
Ceramics			4			
Agriculture						
Economics		92				
Education		6				
Engineering		12				
Agronomy		35				
Horticulture		10				
Animal industry		36				
Dairy industry		13				
Veterinary science		15				

*Data not furnished.

There are no conclusions to be drawn from this table in addition to those already presented. The data indicate that there should be decreasing emphasis on modern languages in the institutions, except the state university. The data support the recommendation for the division of the sciences, on the graduate level, between the two larger institutions. A division of the sciences for major work, on the undergraduate level, might be warranted, but the state college needs undergraduate science of several kinds and the state university has the better facilities for teaching sciences. The recommendation to discontinue work in secretarial science at the state college is supported. The recommendation to reduce home economics work at the state university, to a minor or service department, is supported by the comparative amounts of that work taught. The recommendation for transferring geology from the state university to the school of mines is warranted on the basis of enrollment figures.

Summer Sessions:

Summer sessions are held in four of the state institutions. None is held in the school of mines and the state college, except that instructors in the state college tutor a few students for pay during the summer months. Enrollment has been declining recently in the institutions that hold summer sessions. Enrollment for the last two summers has been as follows:

	1940	1941
Montana State University	853	655
Eastern Montana State Normal School	187	168
Montana State Normal College	176	164
Northern Montana College	98	77
Total	1,314	1,064

There were not enough students in three of the institutions to warrant the holding of a summer session. The institutions retain the services of nearly double the number of instructors needed to teach summer session classes. The duplication of courses is also very wasteful. It is no excuse that the summer sessions are self-supporting as to instruction, while leaving administration and operation and maintnenace of plant as expenses against the regular session. Waste is not justified. Either the summer session should be made to pay its full cost, or fees charged students should be reduced.

Classes are very small in all summer sessions. Last summer most classes had fewer than 10 students and many had fewer than five students. The number and percentage of classes of from one to 14 students were as follows:

	Classes One to 14 Enrollment	
	Number	Percent
Montana State University	147	73.9
Eastern Montana State Normal School	58	80.6
Montana State Normal College	54	80.6
Northern Montana College	24	75.0

About three-fourths of the summer session classes were too small to warrant their being continued.

It is recommended that the four institutions consolidate their summer sessions in the state university, under one director, and with one staff. The tutoring work of the state college, except in engineering and agriculture, should also be transferred to the state university. The necessary instructors for elementary school education should be drawn from the three normal schools as, also, should some teachers of other subjects. The probable 900 or 1,000 students will not tax the physical capacity of the university. Each teacher will have opportunity to take work from a broader program of offerings, and duplication of similar and identical subjects will

be avoided. It is possible that the combined program of offerings may draw additional students to the institution so that the usual loss of summer session students might not occur.

No non-resident fee is charged for out-of-state students for summer session attendance. Of the 853 students in attendance at the state university, in 1940, a total of 244, or 28.8 percent, were from other states. It is recommended that non-resident fees be charged out-of-state students, in ratio to the charges made to non-resident students of the regular session.

Libraries:

Libraries are provided for the several institutions of higher education as follows:

Institution	Volumes	Added 1940-1941	Comments
M.S.U.	212,085	4,028	More room of the existing library building is needed for stacks and reading room. Book collection very large for number of students.
M.S.C.	60,095	1,989	Present quarters are very inadequate. A library building is badly needed.
M.S.N.C.	22,936	410	More than adequate library in every respect for the number of students.
N.M.C.	13,557	885	Library room in basement of a church is very unsatisfactory. Poor light and inconveniently located for use. An adequate room in an academic building is needed.
M.S.M.	12,060	222	Adequate in every respect.
E.M.S.N.S.	11,125	512	Satisfactory for size of enrollment.
Total	331,858	8,046	

No recommendation, in addition to those made in the studies of the several institutions, is required.

Class Size:

One of the most important factors in the cost of higher education is the size of classes. It is very expensive to give instruction to classes of fewer than 15 students. On the other hand, it is usually inexpensive to give instruction to classes of large

enrollment, but the quality of work, in most subjects, is likely to be unsatisfactory if classes have more than 50 students enrolled in them.

The size of classes in the several institutions of higher education may be compared as follows:

Institution	Number of Classes Having Enrollments From 1-14	15-49	50 and Up
E.M.S.N.S.	59	202	7
N.M.C.	46	96	14
M.S.U.	423	649	88
M.S.C.*	1,031	1,666	300
M.S.M.	49	100	32
M.S.N.C.	135	79	2

*Number of credit hours taught. Data were not furnished for class size in terms of number of classes.

Institution	Percent of Classes Having Enrollments From 1-14	15-49	50 and Up
E.M.S.N.S.	22.0	75.4	2.6
N.M.C.	29.5	61.5	9.0
M S.U.	36.5	55.8	7.7
M.S C.	34.3	55.6	10.1
M.S.M.	27.1	55.2	17.7
M.S.N.C.	62.5	36.6	0.9

Eastern Montana State Normal School had the largest percentage of classes in the satisfactory class size of 15 to 49 students. The poorest showing was made by Montana State Normal College, in which 62.5 percent of all classes had from 1 to 14 students enrolled. The school of mines had the highest percentage of large classes, though certain classes at the state university and the state college were very large.

Rank of Instruction Employes:

The professional rank of instruction employes of the several institutions of higher education may be compared as follows:

Institution	Percent of Instruction Staff Classified As Professor or Above	Associate Professor	Assistant Professor	Instructor or Below
E.M.S.N.S.	50.0	28.6	21.4	0.0
M.S.U.	45.5	11.1	26.2	17.2
M.S.M.	52.6	5.3	26.3	15.8
M.S.C.	35.0	16.2	17.1	31.7
N.M.C.	9.5	23.8	38.1	28.6
N.S.N.C.	20.0	5.0	25.0	50.0

There are wide differences in the percentage of faculty members of each rank in the different institutions of higher education. Moreover, none of them are properly balanced among the several ranks. There is need for adjustment of positions for the whole university of Montana, as a single institution, before any salary schedule for the whole university system can be made effective.

Teaching Loads:

Hours of Service of Instruction Employes: Employes in all institutions of higher education were requested to state the number of hours per week they devote to teaching duties and to non-teaching duties. They were asked to state the number of hours they devote to the former in the classroom, in the laboratory, in student conferences, in planning and preparation of work, in grading and follow-up of students, and in other teaching duties. Likewise, they were asked to state the number of hours per week they devote to each of ten non-teaching duties. The average number of hours per week that faculty members work, according to their statements, was as follows:

Institution	Hours Per Week Devoted To Instruction	Other Duties	Total
Northern Montana College	50.0	8.2	58.2
Montana School of Mines	45.6	10.4	56.0
Montana State University	38.2	16.7	54.9
Eastern Montana State Normal School	44.6	9.6	54.2
Montana State College	37.6	11.6	49.2
Montana State Normal College	35.4	11.6	47.0

The average number of hours worked per week is very heavy in all of the institutions except the state college and the state normal college. In most institutions, the average number of hours faculty members work each week is about 50. The reason the number of hours of work in the state university was so high is that the members of the staff devoted so much of their time to work other than teaching. This consisted of many extra duties, among which were various administrative duties, committee duties, research work, and the like.

The teaching loads in Northern Montana College and the Montana School of Mines were exceedingly heavy. Other data, presented elsewhere in this report, and in the reports on these institutions, confirm the conclusion that average teaching loads were very heavy in these two institutions.

Students per Instructor: The average teaching load of the instructors of a college may be measured by the number of equivalent full-time students per equivalent full-time instructor. This measure, for the several institutions of higher education, for 1940-1941, was as follows:

Institution	Equivalent Full-Time Students Per One Equivalent Full-Time Instructor
Northern Montana College	24.3
Montana School of Mines	22.6
Montana State University	21.0
Eastern Montana State Normal School	20.2
Montana State College	20.0
Montana State Normal College	12.5

Enrollments have declined, drastically, this year in all of the institutions except Montana State College. Staffs have not declined in the same ratio, so it is probable that the ratio of equivalent full-time students to equivalent full-time faculty members has declined, markedly, since last year, in all institutions except the state college.

The only institution with a very high ratio of students to faculty members was Northern Montana College, and that is an institution of junior college grade where ratios can be higher than in institutions having the two upper years of college work in which students are beginning to specialize after having selected a major.

Probably the actual teaching load on the basis of the ratio of students to faculty members was heaviest in the school of mines. The ratio of 22.6 equivalent full-time students per one equivalent full-time faculty member was derived by determining the number of full-time students with a divisor of 19, which is the number of credit hours an average student in that institution carries in a semester. In the other institutions, the divisor was 16 or 17 credit hours. However, it may be assumed, of course, that a student does no more work in 19 credit hours in the school of mines than in 16 credit hours in the state university, and that a faculty member teaches no more in 19 credit hours in the school of mines than is taught in 16 credit hours in the state university. Nevertheless, the 19 credit hours have to be taught and this number means that instructors must spend more hours in the classroom with students.

Another factor, to which attention should be called, is that a small number of the students in the state university, the state college, and the school of mines, are graduate students. Just as the ratio of equivalent full-time students to equivalent full-time faculty members should be lower in a four-year college than in a two-year college, so it should be still lower in a graduate institution. However, these three institutions have relatively few graduate students. The highest ratio of graduate students to total enrollment, was in the school of mines.

The lightest load, according to this measure, was in the state normal college. This results from a more rapid decline of student enrollment than of faculty members, so that the institution is considerably overstaffed at present, considering the fact that most of its students are of junior college grade.

Credit Hours Per Instructor: Teaching load may be measured by the number of credit hours taught by instructors. This, usually, is identical with the number of hours a week an instructor meets his classes, except that in the case of laboratory and similar types of work, an instructor meets his class two or three hours a week for one credit hour. The number of credit hours taught by instructors is the usual method of determining teaching load by faculty members, but it is inadequate in that it does not take account of the difference of difficulty in teaching a small class of, say, three students and a large class of, say, 150 students. It also ignores the load caused by inefficiency of organization, which causes a great many small classes to be taught.

The number of credit hours taught per equivalent full-time instructor, in 1940-1941, was as follows:

Institution	Average Number of Credit Hours Taught Per Instructor
Montana School of Mines	16.5
Northern Montana College	14.5
Montana State Normal College	14.5
Montana State College	14.4
Montana State University	14.3
Eastern Montana State Normal School	13.3

The teaching loads, as measured by the average number of credit hours taught by instructors, were not heavy. They appear to have been heavy in the school of mines, and are fairly heavy in that institution, but it should be remembered that, because of the greater number of credit hours required of students at that institution, each credit hour has less value than in the other institutions. Because of graduate work given at the state university, the state college, and the school of mines, one might expect the number of credit hours per instructor to be slightly lighter in these institutions than in the others. But the credit hour teaching loads in these institutions are about the same, on the average, as in the others.

The average teaching load in an institution, by this most commonly used measure of credit hours per equivalent full-time instructor, is controllable. The change of policy with respect to the holding of small classes or of dividing large classes into sections to be taught separately, would change the average number of credit hours taught per instructor. On the other hand, such changes as these would not influence the average teaching loads as shown by the other measures, which are the ratio of equivalent full-time students to equivalent full-time faculty members or the average number of student credit hours per equivalent full-time faculty member.

Student Credit Hours Per Instructor: One of the best measures of teaching load is the number of student semester credit hours taught per equivalent full-time instructor. This number is determined very simply by dividing the total number of semester, or quarter, credit hours taught in an institution or instruction department, or subject, by the number of equivalent full-time instructors

teaching in that institution, department, or subject, and dividing the result by two, to determine the average for each semester, or by three to determine the average for each quarter, depending upon which is the form of organization of the college calendar. Or, the total number of semester, or quarter, student credit hours may be divided by two, or three, respectively, to secure the average number of student credit hours for each semester, or quarter, before the division is made by the number of equivalent full-time instructors.

The number of student credit hours per equivalent full-time instructor, for the several institutions of higher education, for 1940-1941, was as follows:

Institution	Student Credit Hours Per Equivalent Full-Time Instructor
Montana School of Mines	430
Northern Montana College	388
Montana State College	347
Montana State University	335
Eastern Montana State Normal School*	323
Montana State Normal College	200

*Number completing courses instead of number registered in courses as in the other institutions.

The number of student credit hours per equivalent full-time instructor, shows the very heavy average teaching load for the school of mines. There is a heavy real average teaching load in that institution, but the average teaching load is not so heavy as it appears, due to the fact that a credit hour in that institution, and likewise a student credit hour, is worth less than in the other institutions. In that institution a student carries, on the average, 19 credit hours each semester. In most of the other institutions, the student carries, on the average, 16 credit hours a semester or quarter. Reduced by the ratio of 19 to 16, the student credit hour load in the school of mines would be 362, which is still a heavy average teaching load, and the heaviest of any of the state institutions of higher education. The average student credit hour loads in the state university and the state college may not have been too heavy, but it should be remembered, in comparing the average teaching loads with those of the other colleges, that the work in these institutions, and also in the school of mines, is, in part, professional and, in part, of graduate grade, in which cases teaching loads must be somewhat lighter than in undergraduate college work.

The average teaching load for the state normal college is little more than half the size of the average loads in the other institutions. The staff is far too large for the amount of work to be performed by that institution, and there is even less work to be performed this year, with the further decline of enrollment, than these figures show for last year.

In considering these average teaching loads, it should be remembered that all institutions, except the state college, have fewer students than last year, and have lost very few staff members, so that teaching loads will probably be somewhat lighter this year than the figures for last year show.

Departmental Teaching Loads: Comparisons may be made of the number of student credit hours taught per equivalent full-time instructor for some of the principal departments or subjects of instruction. Those subjects that are taught in only two or three institutions will not be included. The comparisons follow:

	Average Number of Student Credit Hours Per Equivalent Full-Time Instructor					
Department or Subject	M.S.U.	M.S.C.	M.S.M.	M.S. N.C.	E.M.S. N S.	N.M.C.
Modern languages	316	259	181	64	-	167
English	375	293	300	183	391	352
Social studies	-	-	-	285	335	805
Economics and sociology	573	-	-	-	-	-
History	640	422	-	-	-	-
Economics and history	-	-	1,089	-	-	-
Science	-	-	-	192	388	-
Botany and bacteriology	352	358	-	-	-	-
Zoology	436	521	-	-	-	335(a)
Chemistry	544	623	405	-	-	434
Geology	225	-	400	-	-	-
Physics	290	380	-	-	-	242
Mathematics	306	407	604(b)	275	-	532
Art	329	338	-	156	184	500
Music	178	126	-	166	162	228
Physical education	266	252	150	162	205	434
Home economics	181	400	-	-	-	-
Education	337	629(c)	-	236	517	336
Business administration and secretarial science	568	268	-	-	-	272

(a) Biology.
(b) Includes physics.
(c) Includes psychology.

The teaching loads in some of the institutions could be made much larger in some subjects. In other institutions the teaching loads of certain subjects should be made smaller. They have been made smaller, generally, this year by the declines in the enrollment of students in the institutions. A comparison between the smallest and the largest average teaching loads by subjects may be made as follows:

Department or Subject	Institution	Low	Institution	High
Modern languages	M.S.N.C.	64	M.S.U.	316
English	M.S.N.C.	183	E.M.S.N.S.	391
Social sciences*	M.S.N.C.	285	M.S.M.	1,089
Science	M.S.N.C.	192	E.M.S.N.S.	388
Chemistry	M.S.M	405	M.S.C.	623
Geology	M.S.U.	225	M.S.M.	400
Physics	N.M.C.	242	M.S.C.	380
Mathematics	M.S.N.C.	275	M.S.M.	604
Art	M.S.N.C	156	N.M.C.	500
Music	M.S.C.	126	N.M.C.	228
Physical education	M.S.M.	150	N.M.C.	434
Home economics	M.S.U.	181	M.S.C.	400
Education	M.S.N.C.	236	M.S.C.	629
Business administration and secretarial science	M.S.C.	268	M.S.U.	568
Average		213		496

*All classifications.

Due to the overstaffing of Montana State Normal College, many of the extremely light departmental teaching loads were in that college, and more would have been, probably, but some subjects are not taught in that institution. Montana State College had half of the heaviest average teaching loads.

The average of the lightest average teaching loads is less than half of the number of student credit hours shown as the average of the heaviest average teaching loads.

If English can be taught with an average teaching load of 391 equivalent full-time students in Eastern Montana State Normal School, then 183 student credit hours, in Montana State Normal College, per equivalent full-time instructor, is too low a ratio. Simpler comparisons may be made between the heavy teaching load of 388 student credit hours in science in the former institution and the 192 average student credit hour load in the latter institution. Both of these institutions are teacher training institutions.

The comparative data, here presented, bear out the recommendations previously made (1) that, for major work, geology be transferred from the state university to the school of mines, (2) that, for major work, home economics be transferred from the state university to the state college, and (3) that secretarial science be transferred from the state college to the school of business administration of the state university.

There is great need for equalizing the teaching loads, in the various subjects, among the institutions, as well as for the equalization of loads within the institutions. Lack of adjustment comes from the policy of placing members of the instruction staff on permanent tenure, so that they are retained long after demand

for their subject has waned. Maladjustments are aggravated when college enrollments decline. The solutions would lie (1) in securing greater flexibility in shifting members of the staff from one to another institution, and (2) in using great caution in placing persons on permanent tenure in order to keep the staff regulated in accordance with need. Greater flexibility within institutions can be secured by shifting instructors from one to another related subject, and doing so regardless of protests that are bound to be made by members of the instruction staff.

Popularity of Subjects of Instruction:

The average number of student credit hours taught a semester or quarter in each subject of instruction in all of the institutions of higher education will show the relative popularity of the subjects in terms of the amount of work taken in them by students. Because of differences in organization patterns, it has been impossible to separate some of the subjects from others with which they are consolidated in some of the institutions. In such cases estimates have been made of the probable division of student credit hours among the subjects. In most cases, the figures are accurate, if they have been accurately furnished by the registrars. In other cases, where they have been estimated for one of the institutions, the data as presented will be correct for the others and the totals will not be far from correct. The average number of semester or quarter credit hours in the several subjects, in 1940-1941, was as follows:

Department or Subject	Average Semester Credit Hours	Department or Subject	Average Semester Credit Hours
English	8,358	Forestry	1,474
Chemistry	6,256	Geology	1,176
Engineering (all kinds)	5,528	Military science (a)	1,126
Mathematics (a)	4,986	Law	1,059
Education (a)	3,858	Classical languages	890
Agriculture	3,778	Bacteriology (a)	725
Business administration and secretarial science	3,772	Science	695
History (a)	3,384	Journalism	652
Modern languages	3,200	Biology	402
Home economics	2,722	Pharmacy	341
Physical education	2,589	Entomology	198
Social sciences	2,537	Nursing education	178
Physics (a)	2,470	Orientation	142
Zoology	2,274	Industrial art	141
Economics and sociology(a)	2,199	Geography	114
Music	2,192	Library	105
Botany (a)	2,147	Religion	59
Art	2,094		
Psychology (a)	1,970		

(a) Some part of the figures that make up this total have been estimated.

English holds first place among the subjects of instruction, as is usually the case. Chemistry holds second place in the number of student credit hours. This subject usually ranks high, but seldom holds second place. For this reason, if for no other, it would be unwise, probably, to reduce chemistry to the place of a minor subject in either of the two larger institutions.

When all kinds of engineering are lumped together, it is found that engineering ranks third in popularity with students. Mathematics, which accompanies engineering, and is taken largely as a part of engineering, ranks fourth. If engineering and mathematics were combined they would rank above English. However, some of the mathematics was studied at the state university and the smaller colleges, where no engineering courses are taught.

Three other vocational subjects, education, agriculture, and business administration and secretarial science, hold fifth sixth, and seventh place respectively. These are followed by the academic subjects of history and modern languages, each with more than 3,000 student credit hours, per semester or quarter.

Student Welfare Enterprises:

In the larger institutions, a division of student personnel should be established, headed by a dean of student personnel, to bring together and to coordinate and direct all of the activities directly and indirectly related to the educational, vocational, financial, social, health, and other forms of guidance and counseling, and such recommendation was made for the state university and the state college. A division of student personnel would include direction of such interrelated activities as fraternities, college social life, intramural sports, and other forms of recreation, student housing, student employment, scholarships, loan funds, student health, student discipline, and the like. In the smaller institutions, these activities should also be coordinated, but it may not be deemed necessary to form a separate division for them.

Health and medical service are well developed in the two larger institutions on a self-supporting basis, from fees of $9 a year charged to students. There is need for some health service in some of the smaller institutions, for it has been shown that all of the institutions draw many students from distances of more than 100 miles from the institution.

Dormitories and dining halls are operated on a self-supporting basis, with the purpose of not only paying expenses but of paying interest on bonds and of retiring bonds issued for their construction. The bonds have been issued without obligating the state for their payment, according to the terms of the law providing for this means of financing such building operations. Similar methods have been used in financing the construction of student union buildings. In one institution, most of the dormitory rooms are not in use because of an insufficient number of students and the college is paying for

the interest and retirement of bonds from its interest and income fund revenue. This, of course, reduces the amount of moneys available for educational expenditures and, thus, increases the requirements from state funds. The dormitories of several other institutions are not filled this year. It remains to be seen whether or not the colleges will have sufficient revenue from the operation of dormitories to pay the interest and retire the bonds as they become due. If they are unable to make full payments from the income derived from operation of the dormitories, it then remains to be seen who will assume the responsibility, if not the state. This method of financing building construction is a very poor one because (1) the state usually assumes responsibility, in case of default, in spite of a law to the contrary, and (2) when bonds are not issued as state bonds, interest rates are usually considerably higher than would be the rates on obligations of the state. No more dormitories are needed, but if they should be needed in the future, the state should issue the bonds at the lowest possible rate of interest and then require the colleges to make charges for rooms sufficient to pay for the retirement of the bonds, and deposit the income in the state treasury designated for that purpose.

The method of issuing scholarships is excellent. High school honor scholarships are awarded on the basis of scholarship and not of need. The number for any high school depends upon the number of students in the school. The recipient of a scholarship may attend the institution of his choice. The institutions may each grant scholarships to not more than 5 percent of students above the freshman year. There are also two scholarship funds, administered by the executive secretary.

Intercollegiate athletics is conducted very conservatively in the smaller institutions. In the larger institutions, athletics is supported by high student fees; by relatively small game receipts and game guarantees; by the state through its employment of coaches beyond the needs for physical education; and by subscribers, largely from the local communities. These methods of financing athletics are not very satisfactory. If contributions are to be solicited, they should be solicited on a statewide basis. Athletics should be supported without use of appropriations made for the support of the institutions. Athletics is not a part of the educational programs but the activities are, rather, entertainment programs, carried on largely for the pleasure of the general public. If the state is to furnish support for athletics, the support should be by special appropriation for that purpose. It would probably be well to reduce the program of intercollegiate athletics to a point at which the program can be financed by game receipts and modest student fees.

Physical Plant:

The state has furnished most of the institutions of higher education with expensive physical plants. In three of the institutions the plants far exceed the needs, but in two of these the maintenance and operation of many old buildings is a real problem

and, if it were done properly, would be very expensive. In two institutions, the plants are inadequate for the needs of the institutions. In one institution the physical plant is more than adequate in size for the institution, but is not adequate in quality and type of buildings to fulfill the needs of the institution, so that there is much vacant space in some buildings, while others are unduly crowded.

The value of plants, as stated by the business officers of the institutions, usually given as inventory value for old buildings and cost for new buildings, is as follows:

Institution	Campus and Improvements	Buildings	Equipment	Total
M.S.U.	$325,000	$2,500,000	$750,000	$3,575,000
M.S.C.	314,000	1,977,000	600,000	2,891,000
M.S.M.	41,932	1,146,396	296,569	1,484,897
M.S.N.C.	25,509	721,076	123,541	870,126
E.M.S.N.S.	42,376	252,103	54,207	348,686
N.M.C. (a)	-	-	-	-

(a) Data for value of physical plant are not at hand. The value is known to be, relatively, very small.

Some notion of the provisions made for the plants of the several institutions of higher education may be gained by considering the value per enrolled student. Figures showing the value of plant per equivalent full-time student for last year have been presented in the several reports on the institutions. The value per enrolled student soon after the beginning of the college year, 1940-1941, may be shown as follows:

Institution	Regular Session Students Fall, 1941	Value of Plant	Value of Plant per Student
M.S.M.	293	$1,484,897	$5,069
M.S.N.C.	191	870,126	4,556
M.S.U.	1,508	3,575,000	2,371
M.S.C.	1,730	2,891,000	1,671
E.M.S.N.S.	227	348,686	1,536
N.M.C. (a)	402	-	-

(a) Data are not at hand for the value of the physical plant of Northern Montana College. It is believed that the valuation per student would be less than $1,000.

In the main, the valuations per student are very high. This is partly due to present low enrollment of students in most of the institutions, and partly due to the fact that some expensive buildings, still included in valuations, are not adequate for their purposes, and are not being fully used.

There are great wastes of building area at the school of mines and the state normal college. Each institution could have an enrollment three times the present enrollments without full utilization of instruction provisions. The state university has more building area than it can use, but some of the buildings have deteriorated to a point at which they cannot be used at all or cannot be fully used. The state college needs more buildings for use by classes. A part of its valuation consists of buildings used by the agricultural extension service and the agricultural experiment station, so that the valuation per student, of usable instruction buildings and ordinary auxiliary buildings, is lower than is shown. Eastern Montana State Normal School has physical facilities for more than double the number of students enrolled. Northern Montana College needs an additional building to be used for administrative offices, library purposes, and classrooms and laboratories.

The urgency of need for building construction and major remodeling may be listed in the following order:

Kind of Construction	Institution
Remodeling and repair of old buildings	M.S.C.
Library building	M.S.C.
Boiler and piping	M.S.C.
General building (administrative offices, library, and classrooms)	N.M.C.
Addition to chemistry building	M.S.C.
Addition to agriculture building	M.S.C.
Engineering laboratory addition and change of engineering equipment	M.S.C.
Remodeling of science hall	M.S.U.
Women's gymnasium	M.S.U.
School of music building	M.S.U.
R.O.T.C. unit	M.S.C.
R.O.T.C. unit	M.S.U.

It is probable that it will be impossible to construct any of the buildings in the immediate future, due to the impossibility of securing materials and labor. Furthermore, in view of the declining trend of enrollment, additional plant facilities may be entirely unnecessary.

Unit Costs:

Expenditures per equivalent full-time student for operation of the institutions, in 1940-1941, may be shown as follows:

Subject	M.S.U.	M.S.C.	M.S.M.	M.S.N.C.	E.M.S.N.S.
Modern languages	$112.65	$142.85	$(c)	$402.50	$ -
English	113.10	135.17	133.21	197.69	113.05
Social sciences and history	61.40	100.28	(c)	149.51	119.65
Science	-	-	-	196.43	95.24
Botany and bacteriology	148.50	144.39	-	-	-
Zoology	116.70	97.86	-	-	-
Chemistry	153.94	120.62	182.36	-	-
Geology	329.76	-	185.54	-	-
Physics	193.84	131.46	-	-	-
Mathematics	151.86	109.73	89.48(b)	146.25	-
Art	139.42	112.46	-	263.82	195.97
Music	248.18	236.04	-	200.74	266.69
Home economics	236.52	109.60	-	-	-
Education	200.13	132.45(a)	-	306.28	113.78
Business administration and secretarial science	90.65	134.94	-	-	-

(a) Includes psychology.
(b) Includes physics.
(c) Includes foreign languages, economics, and history.

Data were not computed for costs of instruction in the various subjects at Northern Montana College. It appeared that some of the expenditures for instructors' salaries were not divided in accordance with the division of their time among various subjects.

These data, like others that have been presented in other connections, confirm recommendations previously made, as follows:

Home economics: transfer of major work and graduate work from the state university to the state college.

Geology: transfer of major work and graduate work from the state university to the school of mines.

Business administration and secretarial science: transfer of all work in these subjects from the state college to the state university.

Mathematics, physics, and art: all graduate work to be done in the state college and not in the state university.

The cost figures are merely instruction costs and do not include any amounts allocated to the several subjects from expenditures for administration, for operation and maintenance of the physical plant, for capital outlay, or for auxiliary enterprises.

Summary of Recommendations:

On the basis of the facts presented, reasons given, and conclusions drawn, concerning higher education as a state function in Montana, it is recommended:

Recommendations Requiring No Legislation:

(1) That the six institutions of higher education be consolidated into a single institution, designated as the University of Montana, with provisions for administration as follows:

(a) One president of the consolidated university, with an office at one of the larger centers, but with the duty of keeping in close touch with, and spending a portion of his time in, each university center.

(b) The four smaller units to be operated under the direction of deans.

(c) The two larger units to be operated by vice presidents (or provosts) to whom the deans of the schools or divisions at those places would be responsible.

(d) The president to take over the records of the University of Montana, now located in the office of the executive secretary at Helena.

(e) A single business office and a single registrar's office to be located at the unit at which the president maintains his central office, with assistants in the other units.

(f) A single university library, with interchange of books among the branches.

(2) That, if a single president is employed for the University of Montana, as a single institution, a consolidated report be prepared by the president annually.

Note 1. Other recommendations regarding general organization are listed under "Recommendations Requiring Legislation."

Note 2. The remainder of the recommendations listed under "Recommendations Not Requiring Legislation" are usually applicable whether or not there will be consolidation of the institutions into one institution, but in some cases they are applicable only in case the recommendation for consolidation should not be effectuated.

(3) That the institutions consolidate their curricula, use a common system of numbering courses, and publish a consolidated university catalog.

(4) That there be a common system of either semester or quarter divisions of the college year.

(5) That there be a common set of university forms for use by the business managers, registrars, health officers, deans, and other administrative officers.

(6) That there be greater flexibility in adjusting staffs to requirements and that members of instruction staffs be shifted from one to another unit of the University of Montana as surpluses of staff members develop in certain institutions and needs for increased staff appear in other institutions.

(7) That there be shifting of students from one to another unit as the interests of economy and effectiveness of instruction indicate will be feasible.

(8) That, until the three elementary teacher training institutions have considerable increase of enrollment, their work be confined to the first two years of college instruction.

(9) That consideration be given to the possible advisability of establishing two-year vocational curricula in agriculture, home economics, and engineering at the state college.

(10) That the number of departments offering work for majors, in all of the institutions, be reduced by further consolidation of similar subjects.

(11) That the teaching of pharmacy be discontinued at Montana State University and that the state pay any nonresident fees for Montana students of pharmacy in attendance at the state universities of Washington or Colorado.

(12) That secretarial science be transferred from the state college to the state university school of business administration.

(13) That home economics be given as major and graduate work only at the state college, that the home economics taught at the university be given only as minor work; and that the training of Smith Hughes home economics teachers be done only at the state college.

(14) That geology, both for major and graduate work, and also geological research, be transferred from the state university to the school of mines and be consolidated with the department of geology at that school.

(15) That graduate work in fine arts, mathematics, and physics be discontinued from the state university, leaving the state college as the only institution to give graduate work in these subjects.

(16) That the training of teachers of subjects for junior high school or departmental grammar grades be done only by the state university.

(17) That training for the sixth, seventh, and eighth grades in rural and other nondepartmentalized schools be done only by the three institutions that train teachers for the elementary schools.

(18) That the privilege of issuing certificates to teachers be withdrawn from the institutions of higher education.

(19) That the rates of payment to critic teachers be standardized among the institutions of higher education.

(20) That critic teachers be selected, and certified as critic teachers, on the basis of ability to instruct student teachers, by the state superintendent of public instruction; that the best teachers of the state, wherever they may be located, be selected for this work; and that students be sent to these master teachers for receiving training in practice teaching.

(21) That there be better adjustment of the size of instruction staffs to the teaching loads in the several departments of each institution.

(22) That teaching loads, in various subjects, be more nearly equalized among the institutions of higher education.

(23) That the professorial rank of all instruction employes of all institutions of the University of Montana be adjusted.

(24) That guidance and counseling service, in the larger institutions, be coordinated and organized into a division of student personnel, under the direction of a specially trained dean of student personnel.

(25) That health service be added to student welfare programs in the smaller institutions that do not now have such service.

(26) That the number of instructors retained for summer session service be gauged to the number of students that are likely to be enrolled and that the number of offerings of courses for the summer session be reduced so as to eliminate many of the small classes.

(27) That the four institutions, holding summer sessions each year, consolidate their summer sessions in the state university, under one director, and with one staff, and that the necessary instructors for elementary school education, and to some extent for other subjects, be drawn from the normal schools.

(28) That nonresident fees be charged out-of-state students attending the summer session, in the same ratio as charges made to out-of-state students attending the regular session.

(29) That evening classes, if needed, be taught, at the smaller colleges, in the local college buildings as a part of the regular work of the institutions, and as a part of the regular teaching loads of instructors, and without any extra remuneration being paid to instructors.

(30) That only the university give general extension work, away from the campus, and that extension class work be further developed by the university.

(31) That the state university give all college correspondence work for the state and that it be discontinued from the three smaller colleges that now give it.

(32) That correspondence work be given as a part of the regular teaching loads of instructors and that no additional remuneration be received by instructors for the work.

(33) That consideration be given to the feasibility of reducing the interscholastic athletics programs to a point at which they can be supported from game receipts and modest student fees, where such has not already been done.

(34) That buildings in the institutions of higher education, generally, be kept in a better condition of preservation and state of repair.

Recommendations Requiring Legislation:

(35) That, as soon as the state can afford the outlay, if student enrollment does not decline further, certain buildings be constructed at Montana State College and Northern Montana College.

(36) That steps be taken to prevent the development of a double system of local and state higher education in Montana by either the first or second of the possible alternatives presented for dealing with the problem, or by some modification of the first or second alternatives.

(37) That the proposed amendment to the state constitution providing that the state board of education shall consist of seven members, instead of the present eleven members, and for the elimination of the three ex officio members, be passed by the electorate in the November election.

(38) That the provision of the statutes that requires the appointive members of the state board of education to be divided as to place of residence, with four from each congressional district, be repealed.

(39) That the provision of the statutes that not more than four of the appointive members of the state board of education shall be members of any one political party, be repealed.

(40) That the statute providing for local executive boards for each institution of higher education be repealed and that local executive boards be discontinued.

(41) That, when the state can afford the expense incident to conversion of a normal school into a two-year junior college, it convert one of its normal schools into a junior college, which would offer a number of terminal vocational curricula, and that, when the state can afford to do so, some terminal vocational curricula be established in Northern Montana College.

STATE OF MONTANA

GOVERNOR'S COMMITTEE ON REORGANIZATION

AND ECONOMY

EASTERN MONTANA STATE NORMAL SCHOOL

(Report No. 47)

December 10, 1941

Prepared by

Griffenhagen & Associates

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REPORT ON

EASTERN MONTANA STATE NORMAL SCHOOL

Introduction:

Eastern Montana State Normal School was established by legislative act in 1925. The act provided:

> "That there be, and is hereby established, subject to the approval of the state board of education, a state normal school to be located within the state of Montana, east of the 110th meridian, at a place to be designated by the state board of education as herein provided, the said school to be known as the Eastern Montana State Normal School."

The state board of education secured the assistance of a committee of educators from other states to advise it as to the most desirable location for the institution. The result was the selection of Billings as the location of the Eastern Montana State Normal School.

The institution was opened in the fall of 1927 as the fifth unit of the University of Montana, which was established in 1913 to include the, then, four state institutions of higher education.

Half of the receipts from the interest and income from the federal land grant for the support of normal schools goes to the support of this institution.

Extent of Services Rendered:

Location: The institution is excellently located at the outskirts of Billings, which with its suburbs has a population of about 30,000 people. However, in Billings is also located Billings Polytechnic Institute. This was a junior college for young people who desired to work their way through college. It has uncertain financial support. It has recently absorbed the Intermountain Union College, a four-year institution, formerly located elsewhere, the building of which was destroyed by fire. This latter institution grants degrees and is supported by some endowment. Billings teachers, and others, take work at the Intermountain Union College for their bachelor's degrees. In the Polytechnic Institute is also the prosperous Billings Business College with 300 or 400 students. The entire combined institution is said to have about 1,000 students enrolled, including college students, pupils in its academy, and others.

Billings Polytechnic Institute and Intermountain Union College is the principal competitor of Eastern Montana State Normal School for students, though the functions of the institutions are different. Other than this college there are no institutions within a radius of 50 miles of Billings. Junior colleges, giving one year of college work, have been established at Miles City, which is about 150 miles from Billings, and at Glendive, which is about 240 miles from Billings, and both in the eastern part of Montana.

Territory Served: The extent to which Eastern Montana State Normal School renders local or widespread service in the state may be indicated by the distance of the homes of students from the institution. In 1939-1940, these were as follows:

Distance of Residence From the Institution	Enrolled College Students			
	Regular Session		Summer Session	
	Number	Percent	Number	Percent
Within 10 miles	91	25.8	45	21.1
From 10 to 50 miles	22	6.2	17	8.0
From 50 to 100 miles	60	17.0	27	12.7
More than 100 miles	180*	51.0	124*	58.2
Total	353	100.0	213	100.0

*Six students for the regular session and eight students of the summer session are from Wyoming. It is possible that some of these lived within 100 miles of the institution.

It will be noted that more than 50 percent of the students of the institution came from homes more than 100 miles distant from Billings and that only about one-fourth of the students lived in or near Billings.

Non-Resident Students: Of the 353 students in the regular session of the institution, in 1939-1940, thirty or 8.5 percent came from other states. The states from which students came were as follows:

State	Number of Students
North Dakota	14
Wyoming	6
Kansas	3
California, Nebraska, Minnesota, Wisconsin, Missouri, Texas, and Tennessee, one each	7
Total	30

A special fee of $75 a year is charged each out-of-state student, but this, together with the regular fee, will not cover the cost of his education in this school. Montana students, of course, sometimes attend the state colleges of other states, so that there may be a reciprocal obligation to educate out-of-state students.

Growth and Size of the Institution: The growth and size of the institution may be shown as follows:

Year	Preceding Summer Session	Regular Session
1930-1931	409	326
1933-1934	363	446
1936-1937	261	313
1939-1940	255	353
1940-1941	187	311
1941-1942	168	227 (November 1)

The total enrollment for 1941-1942 will not be available until the close of the present school year. However, the gross enrollment, as of November 1, was 227 students. This is 27 percent below the total enrollment of last year. However, additional students are likely to enroll for the second and third quarters. Last year, on November 1, there was a gross enrollment of 278 students. Thus, the decline of enrollment as of November 1 was 18.4 percent below the enrollment of November 1 last year.

Functions:

The law provides that "The objects and purposes of said normal school shall be primarily for the instruction and training of teachers for the public schools of Montana." While this definition of the functions of the institution may permit other, secondary, functions, it is clear that the institution was established as a teacher training school and the institution has adhered closely to the fulfilling of this function. It does not offer any curriculum for general or liberal arts college students and its curriculum omits, even, foreign languages and mathematics, which could be taught, in a teacher training institution, only at the expense of subjects that are more important for study by persons in training for teaching in the elementary schools.

Accreditation:

Eastern Montana State Normal School is accredited for three years of college instruction by the Northwest Association of Secondary and Higher Schools. Students who complete the two-year curriculum are given credit for two years of college work in liberal arts or education curricula in degree-granting institutions.

General Control:

The law provides that "The control and management of the said Eastern Montana State Normal School shall be vested in the state board of education and in (a) local executive board, which shall be appointed and constituted as provided by section 842." In practice the control of the institution is vested in the state board of education. The local executive board meets monthly to approve claims, but seems to have no distinctive function to fulfill.

The state board of education had, for its executive officer, a chancellor for many years, but that office was discontinued a few years ago. The chancellor had an executive council to advise him, which council consisted of the presidents of the six institutions of higher education and the deans of the larger institutions. Now the executive council advises the board directly. The deans of the larger institutions have been dropped from the council.

Admission of Students:

No means of recruiting students are used, as a rule, but last year a prospective shortage of well qualified teachers led the president to discuss the situation in nearly all high schools of the Yellowstone Valley.

Students are admitted by diploma from a four-year accredited high school if they have completed 3 units of English, 1 unit of American history and government, and 2 units from each of 3 of the following groups: mathematics, history and social science, laboratory science, and foreign languages. Provision is made for the admission of students with advanced standing from other colleges and for admission of students over 21 years of age, who have not completed high school. These have been the requirements in all state institutions of higher education since 1927, except that there are additional requirements for admission to some of the specialized curricula of some of the institutions. The requirements of the institution for admission of students are satisfactory.

Classification of Students:

In 1940-1941, students of the regular session and the summer session were classified as follows:

	Regular Session		Summer Session	
Classification	Number	Percent	Number	Percent
Freshman	156	50.2	35	20.8
Sophomore	151	48.5	21	12.5
Junior	4	1.3	112	66.7
Total	311	100.0	168	100.0

It will be noted that the institution is almost entirely a two-year institution for the regular session and is largely an institution for juniors for the summer session. This is explained by the fact that teachers, who have already had two years of training in preparing themselves for certification, return to the institution for advanced training in the summer months. Such advanced training is not required for certification but some of the cities are requiring three or four years of teacher training as a prerequisite to employment in their school systems.

Last year an unsuccessful attempt was made to make the institution a four-year college. Data on the classification of students show that, for the regular session, there are not enough students in the junior year to warrant its continued maintenance. In the summer, however, there might be good reason for giving instruction in a fourth year. The question of giving a fourth year of college instruction in the summer session, and granting the degree, should be given consideration. That change is not definitely recommended here because (1) authorization to grant the degree, once it is secured, might not be limited to the summer session where it is warranted, but might be extended to the few students who would desire to take advanced work in the regular session, and (2) the enrollment of the institution is still declining and it may not again increase to any considerable extent for several years.

Organization and Staff:

Outline of Organization: The form of organization of the staff of Eastern Montana State Normal School is as follows:

Title of Position	Number of Positions	Annual Salary
President	1	$5,292
Secretary to the president	1	1,140
Stenographer (part time, employed by the hour, also responsible to the registrar and the secretary to the registrar)		
Professor of English	1	3,150
Professor of English	1	3,000
Professor of social sciences	1	3,150
Associate professor of social sciences	1	3,000
Associate professor of science	1	2,900
Professor of education	1	3,875
Professor of education	1	3,450
Associate professor of education	1	3,000
Professor of music	1	3,270
Director of music	1	2,250
Professor of art	1	3,100
Assistant professor of art	1	2,300

Title of Position	Number of Positions	Annual Salary
Associate professor of physical education	1	$2,300
Assistant professor of physical education	1	2,450
Librarian	1	2,250
Student assistant (part time)	2	
Registrar and business secretary	1	2,500
Secretary to the registrar	1	1,260
Custodian of buildings and grounds	1	1,680
Campus assistant (temporary, summer months)	1	
Student janitor (part time)	7	

No comment is needed as to the form of organization of the staff.

This institution, unlike the others of the state, pays the salaries of instructors on the basis of 12 months of service. The salaries for 9 months of service may be compared with the salaries paid at Northern Montana College and at Montana State Normal College by deducting $300 from the salaries paid, since $300 is the summer session salary usually paid at the other institutions. Or comparisons may be made with other institutions by adding the salaries paid for summer teaching in the other institutions to the regular salaries.

Equalizing the salaries by either method, will show that salaries are considerably higher in Eastern Montana State Normal School than in either of the other institutions that train elementary school teachers. This, of course, does not take into account the possible differences in qualifications of faculty members and differences in teaching loads. It is not maintained that salaries are too high in this institution or too low in the others. Attention is merely called to the fact that they are not equivalent.

Rank of Instruction Positions: The rank of instruction positions is as follows:

	Number
Professor	7
Associate professor	4
Assistant professor	3
Instructor	0
	14

Just as some of the institutions have too large a ratio of positions of low rank, this institution has too large a ratio of its positions of high rank. This illustrates the fallacy of any plan for the determination of the amount of salaries to be

paid on the basis of position rank, unless there is first set up a limit for the number of positions that may be classified in each rank.

Half of the faculty members in this institution are classified as professor and all but three of the faculty members are classified in the two highest ranks. Usually, it is considered to be good practice to classify about half of a college staff in the two highest ranks and half in the two lowest ranks. There should be more nearly equal distribution of instruction positions between the two highest and the two lowest instruction ranks.

Qualifications of Instruction Personnel: The age of instruction employes, including the president and the librarian who teach classes, may be shown as follows:

Age	Number
20 - 29	-
30 - 39	1
40 - 49	6
50 - 59	4
60 - 69	5
	16

The average age of instruction employes is 51.6 years and the median age is 50 years. The staff is relatively old on the average. No instruction employes are in their twenties and only one is in his thirties.

The qualifications of 16 instruction employes, including the president and the librarian, as measured by educational attainments, were as follows:

Highest Degree	Number	Percent
Doctors'	4	25.0
Masters'	5	31.2
Bachelors'	4	25.0
None	3	18.8
Total	16	100.0

It should be explained that two of the instructors holding no degrees teach music and they have had considerable training, both in the United States and abroad.

The average length of experience of the members of the faculty was as follows:

	Average Years
Teacher in this institution	11.8
Teacher in other colleges	5.6
Non-college educational work	5.0
Non-educational work	2.2
Total	24.6

The faculty of the institution has had long experience, particularly in college teaching in Eastern Montana State Normal School and in other colleges. An average total experience of 24.6 years is to be expected of a staff whose average age is 51.6 years. Nine of the 16 members of the instruction staff have been in the institution since its founding, in 1927, and 12 of the 16 members have been in the institution for either 13 or 14 years. Thus, there is but little turnover in the staff and the present staff varies but little from the staff that opened the college or were employed for its second year of operation.

Four or five members of the staff have made significant contributions to their fields of learning, and two or three have received recognition by education groups for accomplishments in their fields or have been selected for positions of leadership.

Scope of Educational Activities:

Credit Hours Offered and Taught: The institution offered 345.5 credit hours, on a quarter basis, in 1940-1941, and 331 credit hours in 1941-1942. In 1940-1941, a total of 304.5 credit hours were taught, which is 88.1 percent of the number of credit hours offered. It appears that some of the courses that were not taught in 1940-1941 are taught in alternate years. It would be an advantage to students, in planning their studies, if the year that courses will be taught were to be stated in the announcement of courses.

Curriculum: The curriculum is designed to train students for teaching after two years of college study. A certificate to teach is issued to a student at the close of his second year. The institution is accredited for three years of work and most of its summer session students are classified as juniors, but only four students remained for the third year of study last year. No teachers certificate, college diploma, or any other kind of recognition is given for the completion of the third year of study.

The teachers certificate entitles teachers to teach in grades from one to nine. The state university and the state college train high school teachers. Their certificates entitle them to teach in grades six to twelve. Thus, the certificates for elementary school teachers and for high school teachers overlap by four grades.

The work of the freshman year consists of required courses amounting to 51 credit hours (quarter basis) as follows:

	Credit Hours
Education	21
English	6
Social science	6
Science	6
Art	4.5
Music	4.5
Physical education	3
Total	51

This leaves only 45 credit hours that are necessary the second year to meet the requirement of 96 credit hours for the teachers certificate. Of the required 45 credit hours, 20 credit hours are free electives and 25 must be elected in specified subject fields, which are 6 in education, 10 in English, 6 in social science, and 3 in science.

There is no specification of courses for students who return for a third year of education. Generally, they take sophomore courses that they have not previously taken, several courses open to all students, and a few courses restricted to juniors.

There has been some variation in the subjects taught over a period of years, but the trend has been in the direction of substituting more useful courses for courses of less immediate value to beginning teachers, such as the addition of a course on educational guidance and the dropping of a course on the junior high school.

The summer session curriculum includes many of the courses taught in the regular session, but includes, also, advanced courses for teachers in service.

One notable feature of the courses in education is the absence of numerous methods courses, such as methods of teaching arithmetic, methods of teaching reading, methods of teaching language, and methods of teaching nearly every other subject in the elementary school curriculum. The courses on the methods of teaching are consolidated in the three-hour conference class on principles and methods of teaching all the subjects and in the two-hour observation and participation course, for each quarter of the freshman year and in the eight-hour student teaching class for one semester of the sophomore year. There can be nothing but praise for the building of a curriculum without the numerous subject methods courses.

Limitation and Expansion of Curriculum: The institution, very wisely, offers no courses in foreign languages. Foreign languages are valuable media of education, but for every year a student devoted to the study of a foreign language, he would have

to omit a year of study of some subject of the present curriculum. It is inconceivable that foreign language study would be as valuable to elementary school teachers as an equal number of credit hours in any subject now being taught them. Moreover, the experience in other colleges of the state indicates that students will not study foreign languages as elective subjects in any significant numbers.

No college mathematics is taught, the only course being a course in arithmetic for teachers, which is largely a review of elementary school arithmetic. College mathematics is extremely important for some students, yet it is doubtful whether it would be wise to displace any course now in the curriculum with a course in college mathematics as a means of training elementary school teachers for their work.

There is only one science teacher, whereas the other subjects have two teachers. The advisability of adding a teacher of science has been considered. This should not be done. Nine credit hours of science are now required and students have an opportunity to take 13 more credit hours, or 24 credit hours in all. With declining enrollment, it is believed that it would be inadvisable to employ an additional science teacher.

There is no teacher of home economics and consideration has been given to the employment of such a teacher. It is believed that teachers in the elementary schools should have some knowledge of diet, cooking, textiles, sewing, and manners. The desirability of the study of home economics by students who are preparing to teach in the elementary schools is perfectly clear. The subject is certainly as important as the other subjects, including science, art, and music, and possibly it is more important to the elementary school teacher. However, the number of credit hours of home economics studied would reduce the number of hours studied in some other subject. It is suggested that home economics be added to the curriculum but that the work in art be decreased, and that an art teacher be exchanged for a home economics teacher. The declining enrollment will not warrant the institution's employing an additional teacher.

Graduates: There is no such thing as a graduation major in a two-year college. However, at the end of the second year, students are graduated from the two-year curriculum, all receiving a two-year diploma in education. For the regular session there were 122 graduates and for the summer session there were 18 graduates, making a total of 140 prepared elementary school teachers for 1940-1941.

Size of Classes:

Class Enrollment: The distribution of classes, according to enrollment size, for the regular session of 1940-1941, was as follows:

Class Size (Students)	Classes of Stated Enrollment							
	First Quarter		Second Quarter		Third Quarter		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1 - 4	2	2.2	5	5.6	5	5.7	12	4.5
5 - 9	8	8.9	9	10.0	9	10.2	26	9.7
10 - 14	9	10.0	7	7.8	5	5.7	21	7.8
15 - 49	69	76.7	65	72.2	68	77.3	202	75.4
50 - 74	2	2.2	3	3.3	-	-	5	1.9
75 - 99	-	-	1	1.1	1	1.1	2	0.7
Total	90	100.0	90	100.0	88	100.0	268	100.0

Students enrolled for individual lessons have not been included in the tabulation. There were 6 such students the first quarter, 13 the second quarter, and 14 the third quarter.

While 22.0 percent of the classes had fewer than 15 students enrolled, 75.4 percent were in the desirable range of 15 to 49 students enrolled. In the 22.0 percent of small classes, there were 12 classes of 1 to 4 students, 26 classes of 5 to 9 students, and 21 classes of 10 to 14 students in the three quarters of the regular session. The number of small classes should be reduced by some means, such as (1) the discontinuing of classes of small enrollment, and (2) the offering of courses of small enrollment in alternate years.

Data were not submitted for the size of classes by various college years and quarters, but a comparison may be made from computations made from the grouped data submitted for 1940-1941, which assumes that the size of each class in a group is at the middle of the group interval. Computed in this manner, the average size of classes would be as follows:

Classification	First Quarter	Second Quarter	Third Quarter
Freshman	24	25	25
Sophomore	23	19	19
Junior	14	18	17
Open to all	29	38	50
All grades	23	23	23

Students taking individual instruction have not been included in these averages.

The average class size is not as large as should be expected and this is another indication that there is need for reducing the number of classes of small enrollment. However, the average size of class, of all grades, is 23 as compared with 13.0 to 15.1 in the state normal college at Dillon. Even the freshman and sophomore classes are much larger in this institution than in the institution at Dillon.

Subjects of Small Enrollment: The number of classes of small enrollment for the three quarters of 1940-1941 was as follows:

	Number of Classes of Small Enrollment						
	From 1 - 4 Students			From 5 - 9 Students			
	First Quarter	Second Quarter	Third Quarter	First Quarter	Second Quarter	Third Quarter	Total
English	-	-	-	2	1	-	3
Social science	-	-	1	-	-	-	1
Science	-	-	-	1	-	-	1
Education	-	2	2	1	1	-	6
Art	-	-	2	1	2	-	5
Music	2	1	-	2	1	1	7
Physical education	-	2	-	1	4	8	15
Total	2	5	5	8	9	9	38

When the particular classes having small enrollment are analyzed, it is to be noted that 15 of them were in physical education. Often, classes in archery, fencing, tumbling, and badminton can be carried on simultaneously under the direction of one teacher. The same is sometimes true of art. However, other courses, such as harmony, advanced student teaching, teaching art, and public school music, will claim the entire time of a teacher while they are meeting.

Work Loads of Instruction Staff:

Hours of Service per Week: Each member of the instruction staff was requested to state the number of hours he devoted, last year, to each of five instruction duties. The results in hours of work per week follow:

	Hours
Range for all work	34 to 77
Teaching average	44.6
Other duties average	9.6
Total time per week	54.2

An average of 54.2 hours a week is a very heavy work load. Usually, a college faculty works, on the average, from about 48 to 52 hours a week.

Measures of Teaching Load: The number of hours per week, that faculty members devote to teaching and other duties, is not the only measure of the work of college instructors. Three commonly used measures of teaching loads of college instructors are the number of equivalent full-time students per instructor, the number of credit hours taught per instructor, and the number of student credit hours taught per instructor. These ratios will be computed in the paragraphs that follow.

The data were not reported in terms of student credit hours registered, by subjects, as requested, but by student credit hours completed. It is likely that some students in some subjects did not complete the work of all of the courses for which they registered. Hence, in the measures that follow, it should be remembered that teaching loads may be slightly heavier than are shown by the data. This will apply to the measures for total institutional load and for the measures of loads in the several subjects.

Students per Instructor: Total enrollment is not a good indication of the size of an institution because some students are enrolled for only one quarter or two quarters instead of for a full regular nine-months session and other students register for less than a full load. The work of an institution can best be expressed in terms of the number of equivalent full-time students taught. This number may be computed by dividing the total number of registered or completed student credit hours for the three quarters by the average number of credit hours a full-time student will need to carry in order to complete a year of work at the institution.

There were 4,510 student credit hours completed the first quarter, 4,446 student credit hours completed the second quarter, and 4,106 student credit hours completed the third quarter, or a total of 13,061 student credit hours completed in the three quarters of the regular session. A full-time student studies 96 quarter hours in two years in preparation for the teachers certificate, or an average of 48 a year.

A division of the total number of student credit hours taught, 13,061, by the number of credit hours taken, on the average, by a full-time student, 48, gives 272 as the number of equivalent full-time students in the institution in 1940-1941. This is somewhat less than the total gross enrollment and indicates that a considerable number of students were enrolled for less than the entire year or took less than full work.

The number of equivalent full-time instructors is computed by considering each instructor as a full-time instructor unless he is employed as a part-time instructor, or for one semester, only, in which cases he is considered to be a fraction of an instructor, or unless he devotes time to some major administrative or supervisory activity, in which case the fraction of his time devoted to teaching is used in the computations. Minor duties, such as all instructors perform, are disregarded. Computed on this basis, there were 13.5 equivalent full-time instructors in 1940-1941. This assumes that the work of one instructor in testing in the public schools be estimated the same as free work given the college by critic teachers.

A division of the number of equivalent full-time regular session students, 272, by the number of equivalent full-time instructors, 13.5, is 20.2. Hence, in 1940-1941, there were 20.2 equivalent full-time students per equivalent full-time instructor. This ratio is just about what should be expected as an average

teaching load. It is probable that the average load will be a little lighter this year due to the drop of enrollment.

Credit Hours per Instructor: The average number of credit hours a quarter per instructor is determined by dividing the total number of credit hours taught by all instructors by the total number of equivalent full-time instructors. Sections of the same class are counted as different classes. In 1940-1941, there were 188 credit hours taught the first quarter, 176.5 credit hours taught the second quarter, and 175.5 credit hours taught the third quarter, or a total of 540 credit hours taught for the whole regular session. The average number was 180 credit hours each quarter. The average number of credit hours per equivalent full-time instructor would be 180 divided by 13.5, the number of instructors, which would be 13.3. This teaching load is about right. Many colleges have heavier teaching loads according to this measure.

Student Credit Hours per Instructor: Student credit hour completions for the regular session, 1940-1941, were shown to have been 13,061. This is an average of 4,354 credit hour completions a quarter. This number, divided by 13.5, the number of equivalent full-time instructors, is 323, which is the average number of student credit hours completed per equivalent full-time instructor. The average number registered would be slightly greater than 323. This average teaching load falls within the standard of 300 to 350 student credit hours per instructor as an average for an institution of higher education.

Average Teaching Loads by Subjects: The three measures of teaching load, that have been applied to the institution as a whole, may be applied to each subject taught. The average student credit hour load, per equivalent full-time instructor, the average credit hour teaching load on the same basis, and the number of equivalent full-time students per equivalent full-time instructor, by subjects, for 1940-1941, may be shown as follows:

Subject	Number of Equivalent Full-Time Instructors	Average Quarter Student Credit Hours	Average Quarter Credit Hours	Measures of Load in Equivalent Full-Time Students		
				Student Credit Hours	Credit Hours	Equivalent Full-Time Students
Education	2.8	1,448.3	53.3	517	19.0	32
English	2.0	781.7	31.7	391	15.9	24
Science	1.1	427.3	15.7	388	14.3	24
Social science	2.1	702.7	28.3	335	13.5	21
Phys. education	1.4	286.3	14.5	205	10.4	13
Art	2.0	368	19	184	9.5	12
Music	2.1	339.3	17.5	162	8.3	10
Total	13.5	4,353.6	180.0			
Average				323	13.3	20

The teaching loads, while about right for the institution as a whole, are rather unequal according to the measures used. The average teaching load in education is very high, according to every measure. The average teaching loads in physical education, arts, and music are light according to every measure. Possibly, the instructors of these subjects could devote some of their time to assistance in the teaching of education. It must be considered, of course, that individual instruction required in physical education, art, and music makes necessary lighter average teaching loads than are required in other subjects. However, the difference in average teaching loads is very great, and should be more nearly equal.

Teacher Training Program:

The institution trains teachers for grades 1 to 9 and for the rural schools. It trains departmental and junior high school teachers in English, chemistry, mathematics, social science, music, art, and physical education.

The city of Billings is large enough to furnish adequate practice teaching facilities so that it is unnecessary for the normal school to maintain a practice school except in the summer, for a six-weeks term. Last summer the normal school employed four elementary school teachers for 191 elementary school pupils. The school district furnished the building.

During the regular session the normal school uses the public elementary schools for practice teaching purposes. The regular teachers of the Billings public schools serve as critic teachers under the direction of a professor of the normal school. The public school teachers render this service without charge to the state. They are to be commended for their professional spirit. The normal school renders professional testing service to the city schools, free of charge, but this is not necessarily in return for the free use of the public schools for practice teaching; though it does mean that each serves the other.

Last year 157 students practiced in the public schools, fairly evenly divided among the three quarters of the regular session, and 22 students practiced in the summer session. Also, the freshmen observed in the public schools.

The method of training will not be described here. It is unique in some respects, but is psychologically and pedagogically sound.

The institution and the city of Billings are to be commended upon furnishing an inexpensive and effective plan for the training of teachers.

Teacher Placement:

Records on 137 of the new teachers who were prepared to teach during the year 1940-1941 show that 125 were placed in teaching positions, 3 entered other work, 4 continued in collete, and 5 were married. In addition to the 125 new teachers that were placed, the institution placed 205 experienced teachers.

Of the 125 new teachers that were placed, 94, or 75.2 percent, were placed in rural schools. There may be some question as to the suitability of observation and practice teaching in city schools as preparation for teaching positions in rural schools, but there is no practicable means of furnishing practice teaching facilities in the rural schools, without high cost for supervision and inconvenience in arranging a college program of studies, that could be made to fit such a practice teaching program.

Summer Session:

The normal school holds a 9-weeks session each summer, which is so arranged that some classes are held for only six weeks. Enrollment has been rapidly declining over a period of years, as was previously shown. In the summer of 1930, enrollment was 409 but had declined to 168 in 1941. Of the 168 students enrolled last summer, 112 were classified as juniors.

All members of the regular teaching staff are paid on a 12-months basis and are expected to stay for the entire summer session. Last year one was given leave of absence for six weeks and one for three weeks of the session. The teaching loads in the summer are very light, in fact, they are considerably less than half the teaching loads in a quarter of the regular session.

The advisability of employing an entire faculty on a 12-months basis is open to serious question for the following reasons:

(1) Summer session enrollment is slightly more than half regular session enrollment, and not all instructors are needed; hence, the light teaching loads when all are employed.

(2) Some of the normal school instructors, themselves, should be enrolled in universities for advanced study each year.

(3) A regular session faculty does not fit the needs of a summer session. In the regular session, students are almost entirely freshmen and sophomores, recently out of high school, while in the summer session, students are experienced teachers, of junior standing, as a rule. It is not that the subject fields are different, but that the proportions of work in the several fields will be different.

The fact that, in the summer session, 58 of 72, or 81 percent of the classes taught in the summer session had from one to 14 students enrolled, indicates that too many classes were taught. This was probably due, in part, to the fact that an entire staff was retained for a small summer session enrollment.

Extension Services:

Last year five extension classes were taught. The first quarter of the current year, two classes are being held, with 74 student credit hours enrolled in both classes. They are given in the normal school building. Fees of $2.50 a credit hour are charged and the entire amount is paid to the teachers of the classes. No classes are held in other cities and the demand for a third year of teacher training work in Billings has just about been satisfied.

The institution also offers five correspondence courses and had 11 correspondence students enrolled last year. These 11 students were registered for 48 student credit hours. Fees of $2.50 a credit hour are charged and faculty members who teach the classes are paid 75 percent of the fees collected.

Extension class and correspondence work are but minor activities in this institution. Nevertheless, it would be advisable to consolidate them, particularly the correspondence work, with the work of other institutions, in the extension division of the state university.

If extension class work is not transferred to the state university, it should be taught as a part of the regular work of the college and as a part of the regular teaching load of instructors, without additional pay, and the students should be registered as part-time students in the institution.

Library:

The library has 11,125 volumes, of which 285 volumes are bound magazines and government documents. Last year, 512 volumes were added, of which 497 were from appropriated funds and 15 volumes were gifts. Expenditures for library and reference books, in 1940-1941, amounted to $1,536.39. This is a little more than should be required in an institution with a regular session enrollment of 311 students.

The library has 20 percent duplication of books, which is extremely high and would reduce the number of different volumes to 8,900. This library is of satisfactory size for the size and grade level of the institution.

Bookstore:

Textbooks are sold by the college at cost or at cost plus two or three percent profit. It is stated that balances, that are unnecessary for operation, have been turned into the state funds from time to time. However, the bookstore is not being operated as a self-supporting enterprise. No charge is made for the part time of a stenographer devoted to the bookstore nor for rent and operation of the room, nor for time the business secretary devotes to the operation of the bookstore. It is probable that the bookstore has been paying its own way, but proper charges should be made to the bookstore account and it should be operated fully on a self-supporting basis but not as a profit-making enterprise.

Student Welfare Enterprises:

Health and Medical Service: No health or medical service fee is charged and no special health and medical service is rendered other than that furnished by the teachers of physical education. The only service rendered by the physical education teachers is to give health and posture tests and to arrange for the state board of health to give tuberculosis tests. Records are kept of the heart test results, of weight, of height, and of immunizations and vaccinations.

It was shown that 51 percent of the students live more than 100 miles from the institution. With such a large proportion of students living away from home it would be desirable if at least some health service were made available to them. All students should have rather thorough physical examinations each year, should have opportunity to consult a physician, free of charge, and should have a maximum allowance for hospitalization for a limited time upon physician's orders. It is recommended that a small health and medical service fee be charged each quarter and that the most necessary health and medical service be furnished students.

Dormitory: The institution has no dormitory or residence hall of any kind. It is doubtful whether a college of fewer than 300 students in a city as large as Billings needs a dormitory. Student housing in such a city should not be a problem.

The state board of education has decided to construct a $60,000 dormitory, including equipment, at Eastern Montana State Normal School, the entire amount to be raised by a bond issue. Bids have been called for on the proposed bonds.

The building will be three stories. It will be designed to house 54 women and will have a refrigerator and cooking unit for each four women students.

Scholarships and Loan Funds: Last year the institution had 20 high school honor scholarship students and seven sophomore scholarship students. The value of each of these scholarships is $35 for freshmen and $30 for sophomores.

A small student loan fund amounted to $1,341.98 on June 30, 1941. It is loaned to students, in amounts of $25, the quarter prior to their taking a position. Certain organizations of Billings also make loans to students.

Sponsored Student Activities:

Practically all students compete in intramural sports. These are in charge of a women's athletic association for the women students. There are only about 35 men in the student body so that most of them are engaged in some phase of the intercollegiate athletic program.

The institution is a member of the Montana collegiate conference, consisting of the smaller colleges of the state. It participates in contests in basketball, baseball, tennis, and track. Instruction is given in the playing and coaching of six-man football, but the institution does not maintain an intercollegiate football team. An average scholastic grade of C is required for participation in intercollegiate athletic contests. The student council usually appropriates $900 from moneys derived from student fees for the support of student activities.

Two dramatics organizations furnish one-act plays, puppet shows, and full evening entertainments, several times during each year. A debating team, composed of six members, was engaged in 15 intercollegiate debates last year. The mixed chorus had 80 student participants. The school orchestra had about 12, the glee club about 16, and the "a capella" singers about 16 student members. The Midland symphony orchestra is directed by one of the instructors of music. While it is a community enterprise, about 10 of its 50 members are students.

The institution has no fraternities or sororities, but does have a considerable number of social events. On the social calendar for last year there was listed 13 events the first quarter, 16 the second quarter, and 17 the third quarter. There was a variety of types of activities.

The students publish a school paper four times a year and publish a college annual. Student government, on a representative plan, is as well developed as can be expected in an institution in which students leave, as a rule, in two years.

Physical Plant:

Value: The value of the physical plant, as reported for inventory based on cost, is as follows:

Grounds	$ 25,000
Buildings	252,103
Equipment	54,207
Improvements	17,376
Total	$348,686

This is an average valuation of $1,121 per student for the 311 students enrolled in the institution in the regular session of 1940-1941, and is not high as such valuations per student have increased generally during the last few years.

Adequacy of the Physical Plant: The grounds consist of 52 acres. They are fully adequate for the needs of the institution. The landscaping is good in a small area in front of the building, with decorative shrubs and a good stand of grass, but most of the tract is underdeveloped.

The four-story building, constructed in 1935, is large and fully adequate for administration and class purposes for a student body of 400 or 500 students. Each teacher has one or more separate classrooms and a separate office. Also, there is a large amount of unused space in the building.

The administrative offices are in a single connecting unit.

The library room is large and will seat 100 students. This is far more than 20 percent of the number of enrolled students, which is the standard for library seating.

The gymnasium has a stage and is used for an auditorium as well as for a gymnasium. The basement is largely above the ground. A large open area is used for auditorium purposes and for college banquets.

There are unfinished rooms in the basement but, with an enrollment below 300 students in the regular session there is little need for these rooms. There are rooms above the basement that have little or no use.

Need for Repairs: The roof of this six-year old building has frequently sprung leaks at the dome. It has again been repaired. The only repairs now needed are paint on the outside of window sashes and frames.

Operation and Maintenance: Operation and maintenance is rather inexpensive at this institution. There is only one building and a young, energetic college graduate serves as engineer and custodian. He is assisted by students, who work by the hour. The boiler is low pressure and requires a minimum of attention.

Wood floors are kept in excellent condition. They are waxed two times a year. Floors are kept clean. Furniture of classrooms is of the sturdy steel desk-chair type and is in good condition. Folding chairs are used for the auditorium-gymnasium, and are moved from place to place on hand trucks. The glass of windows was clean and blackboards and walls of rooms were clean. Toilet rooms were clean but a deodorant was used in spite of that fact. Money expended for deodorants is wasted 100 percent and may be worse than wasted if the deodorant covers up a foul condition. However, the deodorant had no such purpose in this school.

Receipts and Expenditures:

Means of Financing: Eastern Montana State Normal School is financed from the following sources:

(1) Appropriation from the university millage fund, which is derived from the receipts of a property tax levy of 3½ mills; the distribution of the fund among the institutions is made by legislative appropriations.

(2) Appropriation from the general fund of the state in the amount of the estimated collection of fees, which are deposited in the general fund.

(3) Appropriation of one half of the interest and income from the federal land grant for teaching training, but without specific amount specified in the appropriation.

The income of the institution for the last two years, and appropriations for the current biennium, may be shown as follows:

Income Source	Amount of Income 1939-1940	1940-1941
Fees	$14,803.36	$12,930.95
Interest and income	17,429.02	12,490.35
Appropriation - salaries and expenses	54,699.72	59,924.72
Appropriation - landscaping	654.73	1,336.18
Appropriation - railway fare refunds	-	14.48
Total	$87,591.83	$86,696.68

Appropriations for 1941-1942 were $67,000 from the millage tax and $14,500 from the general fund to offset the deposit of fees in the state treasury. Thus, there has been an increase of $7,000 from the millage tax. This is for the increasing of instructor's salaries. For 1942-1943, the appropriation was $88,000. These increases have come at a time when enrollment is rapidly declining and, if the decline continues, fewer instructors will be needed. Also, the salaries, while not high, are higher for the 12 months than are the regular and summer session salaries of instructors at the other small state colleges.

With the decline of enrollment, it is doubtful whether the institution will have more than $10,000 or $11,000 to remit to the state treasury this year. The appropriation of $14,500 from the general fund will certainly be several thousand dollars more, available for use by the school, than it will have to remit to the treasury for the general fund.

Expenditures: The expenditures for operation and repairs for Eastern Montana State Normal School for the last two fiscal years, may be shown as follows:

	Expenditures 1939-1940	1940-1941
General administration - operation	$13,337.53	$13,081.05
General administration - repairs	15.15	5.50
Education system - operation	46,682.31	47,214.93
Education system - repairs	10.28	8.50
Physical plant - operation	8,430.63	8,341.81
Physical plant - repairs	453.75	668.59
Total	$68,929.65	$69,320.38

In addition to the expenditures for operation and repairs there was expended, in 1940-1941, the following:

Interest on bonds	$6,220.00
Capital - education system	1,880.88
Capital - physical plant	6,938.09

Unit Costs:

Expenditures for 1940-1941 amounted to $69,320.38. These include expenditures for the summer session as well as for the regular session. They are not segregated by the accounting system and instructors are employed for 12 months. Expenditures for operation alone amounted to $68,637.79.

Enrollment for the regular session was 311 and, for the summer session of 1940, enrollment was 187. The summer session is one-third as long as the regular session. One-third of 187 equals 62. Hence, the enrollment of 187 students for the summer is equal to 62 students for the regular session, which added to the 311 students of the regular session makes 373 students.

This is not the equivalent full-time enrollment, for it takes no account of the students taking light loads or of those who drop out. It is impossible to present data for the exact equivalent full-time student load of the institution because the college furnished information only as to the student credit hours completed instead of registered. But this number should not vary widely from the number registered. The computations of equivalent full-time students will account for those students taking less than a full load and for those dropping out at the close of quarters. It will not account for those dropping out during a quarter.

It was shown that, on this basis, there were 272 equivalent full-time students in the regular session. In the summer session, 1,739 student credit hours were completed. If a student in the regular session takes 48 credit hours, on a quarter basis, then 1,739 credit hours amount to 36 equivalent full-time students for a full regular session. The 272 equivalent full-time students of the regular session, and the 36 equivalent full-time students of the summer session, amount to 308 equivalent full-time students for the year.

The unit costs on several bases may be computed as follows:

Total cost per student enrolled for regular session, plus one-third students enrolled for summer session	$185.85
Operation cost per student enrolled for regular session, plus one-third students enrolled for summer session	184.02
Total cost per equivalent full-time regular session student, including summer session enrollment	225.07
Operation cost per equivalent full-time regular session student, including summer enrollment	222.85

The last figure, $222.85, is probably the most significant unit cost figure. It is the unit cost figure for operation, minus repairs and replacements, and is the unit cost figure for the number of equivalent full-time students, which equates the work of part-time students and of students who leave at the end of one or two quarters.

Expenditures for teaching the several subjects, in all four quarters, omitting the expenses for administration, plant operation, library expense, and confining expenses only to subjects, may be computed. It will be necessary to determine the number of equivalent full-time students not only for the regular session but for the summer session as well, since the expenditures have not been segregated for the regular session and employes are hired for 12 months. The results follow:

Subject	Number of Equivalent Full-Time Students	Expenditures For Operation	Cost per Equivalent Full-Time Student
Music	23.5	$ 6,167.30	$266.69
Physical education	19.8	4,749.96	239.90
Art	27.3	5,349.96	195.97
Social science	51.4	6,149.92	119.65
Education	102.5	11,662.40	113.78
English	54.4	6,150.00	113.05
Science	29.4	2,799.96	95.24
Total	308.3	$43.029.50	139.57

The figure for music in the column "Expenditures for Operation" has been refined by the officers of the institution to include a part of the salary of the president. Also, the expenditure for critic teachers for the summer session has been included in the cost for education.

The average instruction cost of $139.57 is very reasonable. This does not include any overhead costs for general administration or the physical plant.

The economical method of training teachers is reflected in the low cost per equivalent full-time student for education. The fact that only one teacher is employed to teach science is reflected in the very low cost of instruction in that subject. It would be desirable if the costs in music, physical education, and art could be reduced, although somewhat higher than average costs are to be expected for music and art, but they should not be double the costs for other subjects.

Value and Cost of Services Rendered:

This report has shown that Eastern Montana State Normal School has but one function to fulfill - that of training teachers for the elementary schools of Montana. It does have a considerable number of students from other states and some of them may return to their home states to teach. The cost is very reasonable, as has been shown, when reduced to a unit basis. The explanation for the reasonable cost is the normal average teaching load and the fact that the institution has adhered to its single purpose, together with the fact that it has no expense, as does the state normal college at Dillon, in providing practice teaching facilities. It uses, free, the school system of Billings for its laboratory.

In spite of the very reasonable unit cost for operation of the institution, and for other expenses, salaries of instructors are higher than in the other small normal college and the small two-year, general college. The institution is well located in Billings. There are indications that the quality of its work is very good considering the limitations of two years of college training for the preparation of a professionally and culturally trained person for the work of teaching. The institution deserves continued support on an economical basis. In general, state money has been expended to very good advantage in this institution.

Summary of Recommendations:

In summary of the suggestions that have been made in this report, none of which require legislation, it is recommended:

(1) That the small amount of extension class and correspondence work remaining in the institution be transferred to the direction of the state university.

(2) That, if extension class work is not transferred to the state university, it be taught as a part of the regular work of the college.

(3) That the plan of paying instructors on a 12-months basis, to include summer school instruction as well as regular session instruction, be abandoned on the ground that (a) not all instructors are needed for the summer session, (b) some instructors should be taking advanced work in universities during the summer, and (c) the subject requirements for a college staff to teach experienced teachers, who largely constitute the summer session students, are not the same as for young freshmen and sophomores in the regular session.

(4) That teaching loads be made more nearly equal.

(5) That the number of classes of small enrollment, already not great, be reduced further by (a) discontinuing some of them, or by (b) offering some of them in alternate years.

(6) That, for courses to be taught in alternate years, the year they will be taught be clearly indicated in the catalog announcement.

(7) That a teacher of art be exchanged for a teacher of home economics.

(8) That an additional science teacher be not employed until there is an increase of enrollment.

(9) That there be more nearly equal distribution of instruction positions between the two highest and the two lowest instruction ranks.

(10) That charges be made to the bookstore account for the entire expense of operating the bookstore.

(11) That a health and medical service fee be charged for the purpose of financing minimum desirable health and medical service for students.

(12) That the use of deodorants in the toilet rooms be discontinued.

(13) That window sashes and frames of the college building be painted on the outside.

(14) That, due to the decline of enrollment and the surplus space on the upper three floors, the unfinished basement rooms be not finished as planned, unless and until they are needed to serve an increased number of students.

STATE OF MONTANA

GOVERNOR'S COMMITTEE ON REORGANIZATION

AND ECONOMY

MONTANA STATE NORMAL COLLEGE

(Report No. 45)

December 4, 1941

Prepared by

Griffenhagen & Associates

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REPORT ON

MONTANA STATE NORMAL COLLEGE

Introduction:

The legislative assembly, by an act of 1893, established a state normal school, at Dillon, and created an executive board, in 1897, for the control of the institution. The school was opened in 1897. The law, as enacted in 1893, and subsequently amended at various times, provides "That there be and is hereby established within two miles of the corporate limits of the city of Dillon, Beaverhead county, Montana, a state normal school, which shall be called the Montana State Normal College."

The enabling act of Congress, in 1889, providing for the admission of Montana into the union of states, made a grant of 100,000 acres of land to the state, the income from which was to be used for the support of normal schools. The interest earned by the fund derived from the sale of a part of this land and the income from the rental of unsold lands are devoted to the support of Montana State Normal College at Dillon and Eastern Montana Normal School at Billings. Until the latter institution was established, in 1927, the entire amount of interest and income from the federal land grant for the support of normal schools went to the support of Montana State Normal College at Dillon.

In 1931 the state board of education made the institution a four-year college and authorized the granting of the bachelor's degree.

Extent of Services Rendered:

Location: The institution is located at Dillon, a small city of less than 4,000 population, in a rather sparsely populated region, in the southwestern corner of the state. There are no other colleges in the region, but the rapid decline of enrollment of the institution since the establishment of the colleges at Billings and Havre show that these colleges, at least, are competing institutions with the institution at Dillon, even though they are located several hundred miles from Dillon.

Territory Served: The extent to which Montana State Normal College is a local institution or serves a widespread area of the state may be shown by the number and percentage of students coming to the institution from various distances. The distances of the homes of students from the college, in 1940-1941, were as follows:

Distances of Students' Homes from the Institution	Regular Session		Summer Session	
	Number	Percent	Number	Percent
Within 10 miles	47	17.7	17	9.7
From 10 to 50 miles	11	4.2	5	2.8
From 50 to 100 miles	39	14.6	35	19.9
More than 100 miles	169	63.5	119	67.6
Total	266	100.0	176	100.0

More than three-fourths of the enrolled students come from homes more than 50 miles from the institution; in fact, 63.5 percent come from homes more than 100 miles from Dillon. This is due partly to the fact that not many people live within 100 miles of the institution.

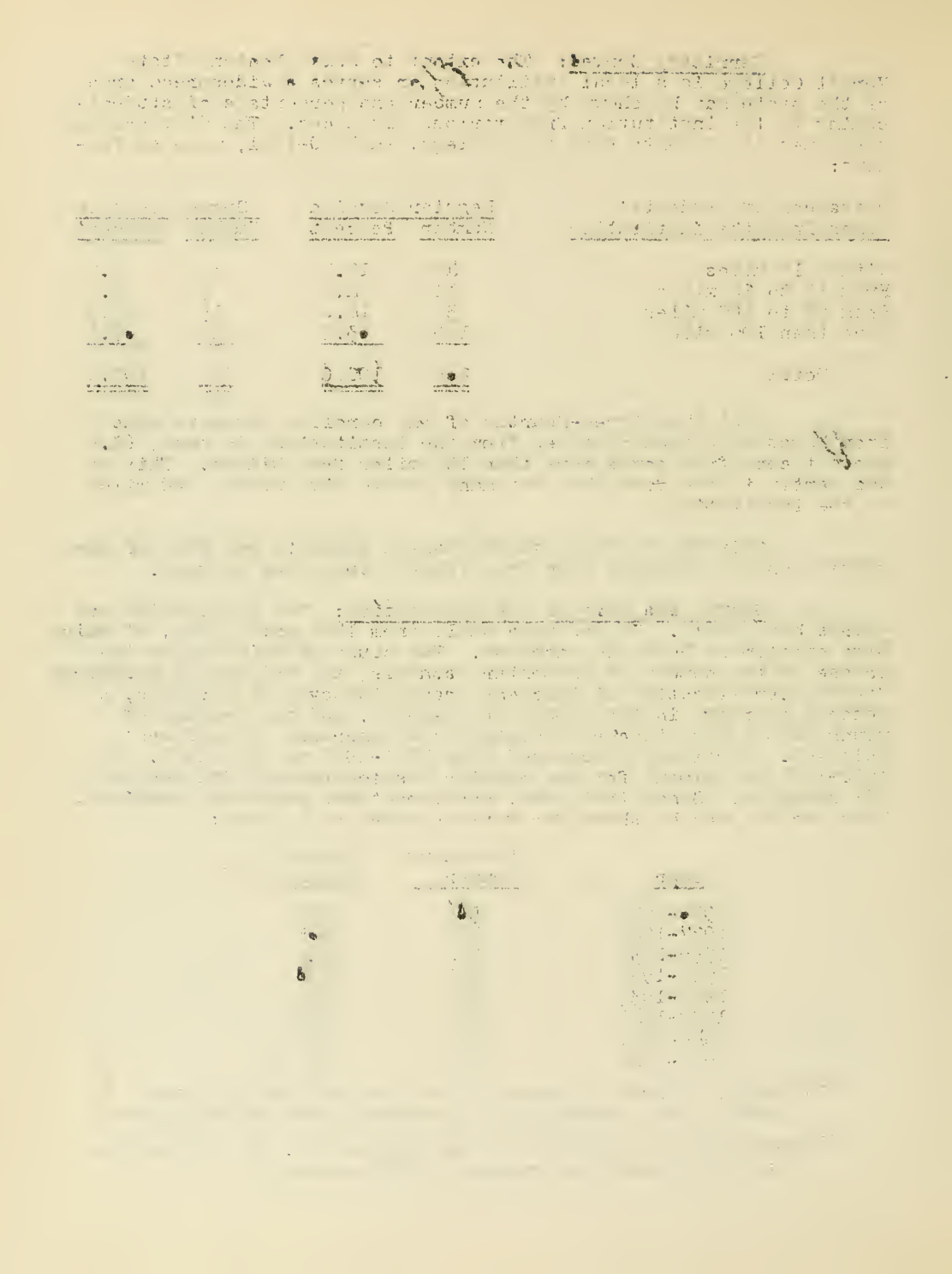
Only two of the regular session students and five of the summer session students come from other states than Montana.

Growth and Size of the Institution: The institution has always been small. It was very small from 1897 until 1921, at which time enrollment began to increase. The cause of this was an increase in the number of elementary schools, the raising of standards for the certification of teachers, rapid turnover of teachers, a general shortage in the number of teachers, and the drawing of young people into teacher training by an increase in teachers' salaries. Enrollment increased from 1921-1922 to 1926-1927. In 1926-1927 enrollment for the regular session reached its peak of 722 students. Since that year, enrollment has generally declined. This decline may be shown for various years as follows:

Year	Preceding Summer	Regular Session (a)
1926-1927	588	722
1927-1928	400	565
1930-1931	282	454
1933-1934	385	448
1936-1937	306	326
1939-1940	180	280
1940-1941	176	266
1941-1942	164	191 (b)

(a) Regular session students do not include special music pupils, who number, on the average, about 28 each year.

(b) This was the enrollment as of October 15. On October 31, the enrollment had dropped to 187 students.



A few more students may enroll the second semester of 1941-1942, but it is unlikely that gross enrollment this year will exceed 200 students and the probable peak of enrollment for the current year is the 191 students enrolled on October 15, 1941. The decline on that date was 28.2 percent below the total enrollment for last year.

The enrollment of the institution has been affected by (1) the general decline in the need for teachers throughout the United States as school population has declined and as certificated teachers have come back to the teaching profession in the depression years prior to the general severe reductions in teachers' salaries, and the consequent decline of enrollment in nearly all teachers colleges from their peaks in the twenties; and (2) the establishment of two additional institutions for the training of elementary school teachers in Montana in the years 1927 and 1929. The institution was, thus, a victim both of general conditions and of state conditions which caused a decline of its regular session enrollment from 722 students to 191 students over a period of 15 years.

It is stated that possibly 25 students from Montana are attending teachers colleges in the state of Washington where no non-residence fees are charged and regular student fees are lower than in Montana State Normal College. Also, some are attending in Colorado. This need cause no concern because these institutions are good teacher training colleges and the students who are trained in them should become good teachers. Moreover, there is no additional cost to Montana, and it may result in a saving of expense if Washington educates Montana students without charge or if students pay their own expenses to attend teacher training institutions in Colorado.

Functions:

The law establishing the institution, as reenacted in the Revised Codes of Montana for 1921, states that "The object of said normal school shall be the instruction of teachers for the public schools of the state." The latest edition of the college catalog restates this purpose in greater detail, but adds no other function than that provided by law.

A few of the students enrolled in the institution are not interested in becoming teachers but no additional courses are offered for them and their number is not large.

Accreditation:

The institution is fully accredited for four years of college work by the Northwest Association of Secondary and Higher Schools. As a four-year teacher training college it is eligible for and holds membership in the American Association of Teachers Colleges. This association sets standards for teacher training but it is not an academic accrediting association, and is not recognized as such by the association of university registrars.

General Control:

The institution is one of the units in the University of Montana and, as such, is under the control and supervision of the state board of education and a local executive board.

The local executive board has no function to fulfill. Originally it had control of the college. Some years ago the local executive board met and gave some advice to the president. Now this board does not even meet, and has not met for several years. If they met, the members would be paid $5 a day, each. Since they do not meet, the per diem is saved.

Admission of Students:

As means of presenting the advantages of Montana State Normal College to prospective students, staff members occasionally visit high schools, and catalogs, circular letters, and other informational material are sent to high school graduates.

Applicants for admission must have reached the age of 16 years and must present evidence of good moral character. They must have completed a four-year secondary school curriculum with credit for 15 or more units of work. They are required to have completed "Three units of English; one unit of American history, and at least two other units from each of three of the following groups: mathematics, history and social science, laboratory science, and foreign language."

Provision is made for the admission of students, who cannot meet these requirements, on condition and for the removal of conditions. Provision is made, also, for the admission of students who do not meet the admission requirements but have reached the age of 21 years. Provision is made, also, for admission of students with advanced standing and for the transfer of students within the University of Montana.

The registrar is responsible for final decision as to qualifications of student applicants. Only one student was admitted on condition last year. Last year 29 high school graduates were admitted with advanced college standing and 99 were admitted directly from high school graduation. Psychological tests are given to freshmen but the results are not used for determining whether or not students are admissible.

Classification of Students:

Students, enrolled in the institution in 1940-1941, were classified in the several college years as follows:

Classification	Number	Percent
Special	1	0.4
Freshman	112	42.1
Sophomore	90	33.8
Junior	41	15.4
Senior	22	8.3
Total	266	100.0

Only 23.7 percent of the students of the regular session were registered as juniors and seniors, and two of these were graduates who were earning additional undergraduate credit in the institution. With 76.3 percent of students enrolled below the junior year of college, it may be said that the institution is largely of junior college grade.

The ratios are reversed for the summer session, when public school teachers enroll for senior college study. In the summer session 31 students were enrolled in the first two years of college and 133 in the last two years. Six of the upper division students had previously been graduated from college. However, summer session enrollment was very small.

The explanation for the small enrollment in the last two years of the regular session is largely the requirement of only two years of college education for certification for teaching. This, likewise, is also the explanation for the enrollment in the upper two years in the summer session. Some of the teachers with two years of college training come back for additional education.

Organization and Staff:

Outline of Organization: The form of organization of the staff of Montana State Normal College, together with annual salaries and the number of months incumbents were employed, as of 1940-1941, was as follows:

Title of Position	Number of Positions	Months Employed	Annual Salary
President	1	12	$5,292
Secretary to president	1	12	1,500
Assistant registrar	1	12	1,700
Student assistant (part time)	1	-	-
Business secretary	1	12	1,800
Secretary, appointment office and correspondence study	1	12	1,410
Professor of English (deceased, position not filled 1941-1942)	1	9	2,600
Assistant professor of English	1	9	2,500
Instructor of English	2	9	2,000
Instructor of English and physical education (college and training school)	1	9	1,500
Instructor of foreign languages (part time)	1	9	810
Associate professor of social studies	1	9	2,900
Assistant professor of social studies	1	9	2,500
Instructor of physical education	1	9	2,200
Instructor of physical education and mathematics	1	9	1,600
Professor of science	1	9	3,000
Instructor of industrial arts	1	9	2,200
Instructor of music (part time) (salary, $980; fees from college students, $773; fees from non-college pupils, $625.50; total, $2,378.50)	1	9	980
Instructor of music $1,800 and fees, amounting to $80.75	1	9	1,880
Instructor of fine art	1	9	1,800
Instructor of fine art	1	9	2,300
Professor of education and science	1	9	3,000
Professor of education (part time)	1	9	2,000
Assistant professor of education (part time)	1	9	1,150

Title of Position	Number of Positions	Months Employed	Annual Salary
Director of training	1	12	$3,200
Clerk, training school (part time)	1	12	480
Training instructor (part time)	5	10	600
Training instructor (part time)	1	10	550
Training instructor (part time)	1	10	500
Training instructor (part time)	1	10	450
Training instructor (part time)	2	10	350
Training instructor (part time)	1	10	300
Training instructor (part time)	5	10	250
Assistant professor of education and training	1	9	2,300
Librarian	1	12	2,000
Assistant professor of education and dean of women	1	12	2,000 M
Nurse - social director	1	12	1,000 M
Supervisor of residence hall	1	12	960 M
Student kitchen and dining room helpers (part time)	15	-	-
Supervisor - house director	1	12	1,020 M
Student kitchen and dining room helpers (part time)	12	-	-
Superintendent of buildings and grounds	1	12	1,716 H
Fireman	2	12	1,572
Janitor	1	12	1,380
Janitor	1	12	1,200

M - Full maintenance.

H - House, light, fuel, and water.

Many of the salaries have been increased by $100, for 1941-1942, above the salaries paid last year. Also, many of the professors and some of the assistant professors and instructors were paid an additional $275 for teaching nine weeks in the 1940 summer session. In 1941, most of the instructors, who were employed for the summer session, were paid $300 for teaching nine weeks. Also, several instruction employes earned a little less or a little more than $100 for the year 1940-1941 from correspondence instruction fees.

The organization outline shows 27 persons as being responsible directly to the president of the institution. There are probably more employes in the institution than are needed, but if all are to be retained there should be some grouping of instruction employes into two or three departments, with some member designated as head of each department.

The position, "secretary, appointment office and correspondence study" can be discontinued. As will be shown later, correspondence study should be transferred to Montana State University. The work of the appointment office can be assumed by either the registrar or the secretary to the president.

Rank of Instruction Positions: The rank of instruction positions may be shown as follows:

	Number
Professor	4
Associate professor	1
Assistant professor	5
Instructor	10

This distribution is poorly balanced in that 50 percent of instruction employes, exclusive of those of the training school, hold the rank of instructor. However, with so large a ratio of instructors to students it would be expensive to pay salaries sufficiently high to warrant giving the rank of professor or associate professor to any large proportion of the staff. If the number of instruction positions were to be reduced to a number commensurate with the number of enrolled students, a recommendation to raise the rank of some of the staff would be warranted.

Qualifications of Instruction Staff: The distribution of the ages of 22 faculty members may be shown as follows:

Age	Number
20-29	0
30-39	9
40-49	2
50-59	4
60-69	6
70-79	1
Total	22

The average age of college faculty members was 47.6 and the median age was 49.5. These are extremely high central tendencies for the ages of a college faculty. The cause is doubtless the rapidly declining enrollment, which calls for a declining staff, together with the permanent tenure rule of the state board of education.

The formal educational attainments of the instruction staff were as follows:

Degree	Number	Percent
Doctors	2	9.1
Masters	16	72.7
Bachelors	4	18.2
No degree	0	0.0
Total	22	100.0

While most of the staff hold the masters' degree this is not particularly high qualification for college teaching. Most instructors have had training beyond their highest degrees. Only the president, who sometimes teaches classes, and one other member of the staff hold the doctors' degree. The faculty is not as well qualified by educational attainments as, for example, is the faculty of Northern Montana State College.

The experience of the faculty members of the institution was as follows:

	Average Years of Experience
Teacher in this college	12.1
Teacher in other colleges	1.6
Non-college educational work	7.3
Non-educational work	0.3
Total experience	21.3

The average length of experience has been 21.3 years, which is long experience, but that is to be expected from a staff with an average age of 47.6 years. Most of this experience has been attained in Montana State Normal College.

Scope of Educational Activities:

Credit Hours Offered and Taught: As nearly as could be computed from the listings in the catalog and data showing which of the courses were taught, the number of quarter credit hours offered in 1940-1941, taught in 1940-1941, and offered in 1941-1942, were as follows:

Subject	Offered 1940-1941	Taught 1940-1941	Offered 1941-1942
Education	123	107	107
English	156	124	138
Fine arts	106	62	95
Foreign language	52	24	33
Geography	28	20	31
Industrial arts	62	58	58
Mathematics	44	28	33
Music	98	57	75
Physical education	61	39	55
Rural school courses	8	1	6
Science	78	42	60
Social studies	114	105	104
Tool subject courses	12	2	9
Total	942	669	804

The courses have been changed from quarter credits to semester credits this year, but the number stated for 1941-1942 have been stated in equivalent quarter credits.

Only 71.0 percent of the courses offered for 1940-1941 were actually taught that year. When 29.0 percent of the courses listed are not taught, there is an extremely high proportion of inactive courses in the college catalog. A student planning his curriculum, might be misled a great many times from his study of the catalog. The purpose of a catalog is to assist students, not to confuse them. It is recommended that inactive courses be dropped from the college catalog and courses that are not taught be omitted from the college catalog.

The decrease in the number of credit hours offered in 1941-1942, below those of 1940-1941, shows that some of the dead courses have been eliminated from the catalog, but there are still far too many courses that will not be taught. This is particularly true since enrollment has decreased 28.2 percent below the number of students enrolled last year.

The offering of 804 quarter credit hours for an enrollment of 191 students is far more than is needed. This would be equivalent to 536 semester credit hours. Of these, one student, who attends the institution for four years, would complete 128 semester credit hours. The other 408 semester credit hours are merely courses for differentiation of curricula. This is a large number for this purpose when only 191 students are enrolled. The number of credit hour offerings should be further reduced.

The number of credit hours offered by this institution and Eastern Montana State Normal School, both of which confine their efforts to the preparation of elementary school teachers, may be compared as follows:

Credit Hours (Quarter basis)	Normal College (Dillon)	Normal School (Billings)
Offered 1940-1941	978	346
Taught 1940-1941	669	305
Offered 1941-1942	804	331

The difference in the number of credit hours offered and taught in these institutions is due to the fact that the normal college offers both two-year and four-year curricula while the normal school offers only two years of study in the regular session and also to the fact that the normal college offers too broad a selection of courses for the few credit hours students have for elective courses. Large numbers of courses for so few students are a cause of extremely small classes.

Curricula: Only two of the students, at present enrolled, do not expect to be teachers, and these are part-time students. The institution is strictly a teacher-training institution and the only curricula offered are teacher-training curricula. The curricula are for training teachers in two years and in four years. They are also differentiated by public school grade levels. The three two-year curricula are as follows:

Primary (Grades 1-3)
Intermediate (Grades 4-6)
Junior high school (Grades 7-9)

These three curricula vary only a little in that practice teaching is done in the appropriate grades for the certificate desired and instead of "reading - literature in the elementary grades" those in training for the junior high school certificate study junior high school literature.

Certain exemptions are made from the requirements of these curricula for students who have had certain high school subjects or who have certain scholastic records.

As four-year curricula, leading to the bachelor of education degree, the college provides curricula for those students who desire four years of training for the certificate and for those students who received their certificate to teach in two years and who desire to continue their work for a degree. For the first group, practice teaching is done in the senior year. For the second group it is done in the sophomore year and again in the senior year.

With these five similar curricula, which include many of the same subjects, it is entirely unnecessary to offer such an elaborate program of supplementary courses as is offered by this college. It is little wonder that only a small proportion of the courses offered are actually taught. Students have only a few credit hours for elective courses and each student can take but few such courses. Because the curricula are so similar in type and all for a single purpose is an additional reason for discontinuing a large proportion of the courses being offered.

Need for Additional Subjects: A need for home economics courses by elementary school teachers has been suggested by someone. The need is conceded, but the number of credit hours for each student has been fixed at 64 semester or 96 quarter credit hours for the teaching certificate and the hours are already fixed, with the exception of seven or eight semester credit hours allowed for free election. Since there are scores of other subjects a student might need, it would be unwise to introduce home economics for the few who might desire it and, thereby, weaken the other subjects. If home economics is introduced it should be required. If it is required, it will have to displace some course or courses already in the curriculum. Likewise, the employment of a home economics teacher should displace a teacher of some other subject. Certainly no additional subjects and no additional teachers are required for the present enrollment.

Graduation Majors: Graduation majors were as follows:

Subject	Regular Session	Summer Session	Total
Art	1	4	5
English	6	6	12
Music	1	-	1
Social studies, including history	5	3	8
Total	13	13	26

With the 26 graduates majoring in only four subject fields, it would seem to be unnecessary to offer enough credit hours for majors in many other subjects. Also, far more credit hours were offered than were necessary for majors in each of these four subject fields.

Size of Classes:

Class Enrollment: Both the effectiveness and the cost of instruction in a college depend, to a considerable degree, upon the size of classes. Some subjects, such as applied music, are taught by private lessons or individual instruction. In considering the size of classes, it will be desirable to ignore the work given by individual instruction, each class of which must necessarily consist of one student.

In the consideration of class size, a course or section of a course taught by a teacher for one or several times a week for a semester or quarter is counted as a class. Courses may carry varying numbers of hours of credit. Separate sections of a course are considered to be separate classes. Students, taking a subject by individual instruction, are not considered to be classes.

A distribution of classes, according to enrollment size, by semesters, is shown on the following page.

There are large numbers of small classes and relatively few of normal size, such as from 15 to 49 enrollment. There were only two of 216 classes having 50 or more students enrolled and there were no very large classes. The first quarter, 64.9 percent; the second quarter, 52.9 percent; and the third quarter, 69.0 percent of the classes had fewer than 15 students. Of all classes of the regular session, 41.2 percent had fewer than 10 students, and many of them were classes of from 1 to 4 students.

A comparison of the size of classes by college years and by semesters may be presented in the form of their average size. The average size of classes, for 1940-1941, may be shown as follows:

Classification	First Quarter	Second Quarter	Third Quarter
Freshman	19.5	21.6	18.0
Sophomore	10.1	10.7	16.0
Junior	8.4	7.0	5.7
Senior	15.0	6.0	7.2
All grades	15.1	14.8	13.0

Students taking individual instruction have not been included in the computation of these averages.

Class Size (Students)	Classes of Stated Enrollment							
	First Quarter		Second Quarter		Third Quarter		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1-4	11	14.3	8	11.8	10	14.1	29	13.4
5-9	21	27.2	16	23.5	23	32.4	60	27.8
10-14	18	23.4	12	17.6	16	22.5	46	21.3
15-49	25	32.5	32	47.1	22	31.0	79	36.6
50-74	2	2.6	0	0.0	0	0.0	2	0.9
75-99	0	0.0	0	0.0	0	0.0	0	0.0
Total	77	100.0	68	100.0	71	100.0	216	100.0

The data show unsatisfactory average class size for every class, every quarter. However, the class size is particularly unsatisfactory in grades above the freshman grade. Instruction with such small classes is extremely costly.

The data on class size show, what has elsewhere been shown, namely, that too many classes are taught. If the number were reduced to about half the number now being taught, the average size of class would be doubled and the cost of instruction would be greatly reduced. It would be impossible to continue the present program with half the number of classes now being taught, but several things could be done to reduce the number of classes and to increase average class size. Among these are:

Discontinue many of the classes with 1 to 9 enrollment.

Offer the other classes of 1 to 9 enrollment and many of those from 10 to 14 enrollment only in alternate years, so as to double their size. The year such courses will be taught should be stated in the announcement of the several alternated courses.

Reduce the offerings for juniors and seniors to two or three subjects for majors, such as English and social studies, only.

Discontinue the practice of repeating courses in two quarters or two semesters in one year.

Reduce courses of small enrollment, that continue for two semesters, to courses of one semester, only, by reducing the scope of the courses.

Combine classes of small enrollment with other classes in subjects of related subject matter.

From data previously presented, it may be shown that far too many different courses are being offered for the number of students enrolled. There were 978 quarter hours of credit offered last year for an enrollment of 266 students. Hence, there were 368 quarter credit hours offered per each 100 students enrolled.

Subjects of Small Enrollment: The number of classes of small enrollment for the three quarters of 1940-1941 was as follows:

	Number of Classes of Small Enrollment						
	From 1-4 Students			From 5-9 Students			
	First Quarter	Second Quarter	Third Quarter	First Quarter	Second Quarter	Third Quarter	Total
English	2	2	2	7	4	9	26
French	1	1	2	1	1	-	6
Social studies	-	-	-	2	1	4	7
Geography	-	-	-	-	1	-	1
Mathematics	-	-	-	2	-	2	4
Science	2	1	-	-	1	2	6
Physical education	1	1	1	2	1	1	7
Music	2	1	2	2	1	3	11
Art	1	1	3	4	4	1	14
Industrial art	1	-	-	-	1	-	2
Tool subjects	1	-	-	-	1	-	2
Education	-	1	-	1	-	1	3
Total	11	8	10	21	16	23	89

Among the 89 classes having from 1 to 9 students enrolled were such subjects as the following: English poetry of the Romantic period (3), history of English literature (3), English literature of the Victorian period (8), modern fiction (8), oil painting (4), oil paintaing, repeated (5), intermediate French (4), advanced French (3), surveying (7), music survey (2), orchestration (6), Mexican and Spanish dancing (6), general biology (2), histography (6), library economy (3), and many others.

It will be noted that some of the subjects of small enrollment are highly specialized courses. They are all good subjects, but students training for elementary teaching evidently do not desire to take such courses as Mexican and Spanish dancing, English poetry of the Romantic period, surveying, histography, music survey, and other highly specialized courses in other fields than education.

Also, several of the 89 small classes are subjects that were repeated in two or three of the quarters. This repetition will cause small classes.

Work Loads of Instruction Staff:

Hours of Service per Week: Each member of the faculty was asked to state the number of hours a week he devotes to each of several instruction duties and to each of several other duties, such as research, committee work, administration, supervision, and the like.

The average number of hours per week devoted to instruction duties, to other duties, and the average total time per week devoted to all duties by college instructors may be shown as follows:

	Average Number of Hours
Instruction	35.4
Other duties	11.6
All college work	47.0

The average working time of instructors is considerably less than in some of the other colleges of Montana.

Measures of Teaching Load: Three commonly used measures of teaching loads of college instructors are the number of equivalent full-time students per instructor, the number of credit hours taught per instructor, and the number of student credit hours taught per instructor. The average teaching loads according to these measures will be discussed in the paragraphs that follow.

Students per Instructor: The requirements for graduation are 192 credit hours, on the quarter basis, or 128 credit hours on the semester basis. Half of this number is also the requirement for the two-year teachers certificate. Thus, in terms of credit hours on the quarter basis, 48 credit hours would constitute average work for one year for one student.

In 1940-1941, there was registered in the institution, in the three quarters of the regular session, 10,560 credit hours. This number, divided by 48, the number of credit hours taken by a full-time student who will be awarded the teachers certificate in two years or the degree in four years, is 220. Thus, there were registered in the college, 220 equivalent full-time students for the session of 1940-1941.

In computing the number of equivalent full-time instructors, each instructor is considered to be a full-time instructor, if employed full time, except that allowances are made for time devoted to the supervision of major activities and for time actually devoted to major administrative or other college duties. Minor duties, which all instructors should perform, are disregarded. Allowance is made for part-time instructors on the basis of the proportion of time they devote to teaching classes. Computed on this basis, there were 17.6 equivalent full-time teachers in the institution in 1940-1941.

A division of the number of equivalent full-time regular session students, 220, by the number of equivalent full-time college instructors, 17.6, is 12.5. Hence, in 1940-1941, there were 12.5 equivalent full-time students for each equivalent full-time instructor of college subjects in the institution. This is an extremely low ratio. A ratio of one equivalent full-time instructor to about 20 equivalent full-time students should be expected as a minimum. In many colleges the ratio is above one equivalent full-time instructor to 20 equivalent full-time students. On this basis of computation, the institution has 6.6 more instructors than are needed for the work given. Of course, to reduce the staff to 11 equivalent full-time instructors, would require a radical change in the curriculum along lines previously suggested.

Credit Hours per Instructor: The average number of credit hours, per quarter, per instructor, is determined by dividing the total number of credit hours taught by all instructors by the total number of equivalent full-time instructors. In 1940-1941, there were taught a total of 768 credit hours on the quarter basis. This is an average of 256 credit hours per quarter. The average number of credit hours, 256, divided by the number of equivalent full-time instructors, 17.6, gives 14.5 credit hours as the average per equivalent full-time instructor. On this basis of measurement the average teaching loads, of 14.5 credit hours a week, are about right. This measure, however, does not take into account the size of classes, but considers the teaching of a class of 2 students as equivalent to the teaching of a class of 100 students. Any measure to increase class size would decrease teaching load on this basis. This is the poorest of the measures of teaching load, but the measure most commonly used.

Student Credit Hours per Instructor: Student credit hour registrations, for 1940-1941, were 3,716 the first quarter, 3,786 the second quarter, and 3,078 the third quarter, or an average of 3,527 student credit hours a quarter. This number, divided by the number of equivalent full-time instructors, 17.6, gives an average of 200 student credit hours per equivalent full-time instructor. This is an extremely light average teaching load as compared with a standard of from 300 to 350 student credit hours per equivalent full-time instructor. The average teaching load is likely to be still less this year with the decline of about 28 percent from the enrollment of last year.

Average Teaching Loads by Subjects: The three measures of teaching load, as applied to the institution as a whole, may be applied to each separate subject. The average student credit hour teaching load, the average credit hour teaching load, and the number of equivalent full-time students each per equivalent full-time instructor, by subjects, for 1940-1941, may be shown as follows:

Subject	Equated Full-Time Instructors	Average Semester Student Credit Hours	Average Student Credit Hours	Measures of Teaching Load per Equivalent Full-Time Instructor		
				Student Credit Hours	Credit Hours	Equivalent Full-Time Students
Social studies	2.2	626.0	34.0	285	15.5	17.8
Geography	0.4	114.0	6.0	285	15.0	17.8
Mathematics	0.7	192.7	11.3	275	16.1	17.2
Education	3.1	731.3	44.0	236	14.2	14.8
Science	1.4	268.3	18.7	192	13.4	12.0
English	4.4	804.7	61.7	183	14.0	11.4
Music	1.3	215.3	17.7	166	13.6	10.4
Physical education	1.0	162.3	13.3	162	13.3	10.1
Art	1.5	234.0	24.0	156	16.0	9.8
Industrial art	1.0	140.7	16.0	141	16.0	8.8
French	0.5	32.0	8.0	64	16.0	4.0
Library economy	0.1	5.3	1.3	53	13.0	3.3
Total	17.6	3,526.6	256.0			
All subjects				200	14.5	12.5

There would be little use in discussing the teaching loads in the several subjects. In not one subject is there a normal average teaching load from the standpoints of the ratio of student credit hours to equivalent full-time faculty members or of equivalent full-time students to equivalent full-time faculty members. On the basis of the average number of credit hours per equivalent full-time faculty member, the loads in all subjects are normal, but these only reflect the large proportion of classes having from 2 to 9 students enrolled.

The number of student credit hours per instructor in the several subjects should be compared with from 300 to 350 as an average for all subjects. There are too many instructors in every subject for the enrollment and this is particularly true for the subjects of French, industrial art, art, physical education, music, English, and science, but is also true of the other subjects.

Specific comments on the teaching loads by subjects all would be very much alike, namely, that fewer teachers are needed. Since data at the end of this year will show even lighter teaching loads, due to further decline of about 28 percent of enrollment, about the only general comment that would be appropriate is that the advisability of discontinuing the institution as a state college should be carefully considered.

Teacher Training:

Scope of the Teacher Training Program: Montana State Normal College prepares teachers for positions in elementary school grades and junior high school subjects. It trains elementary school teachers for rural schools, kindergartens, and primary and intermediate grades. It trains elementary school principals and supervisors. For the junior high schools it trains departmental teachers of English, French, mathematics, chemistry, biology, physics, physiology, geography, history, music, art, industrial arts (not Smith-Hughes), agriculture (not Smith-Hughes), and physical education.

Practice Teaching Facilities: All students in the two-year curriculum and in the four-year curriculum take a course in practice teaching as a prerequisite to qualification for a teacher's certificate. Practice teaching facilities are maintained through cooperation with public schools of Dillon. The college employs and pays the salaries of the director of teaching (except $1 paid by the school district), one general supervisor, two special supervisors, and pays a part of the salary of 16 critic teachers. The Dillon school district furnishes its public schools and the equipment and supplies used by the children. It pays the larger part of the salaries of critic teachers and pays for the operation of its public school plant.

The critic teachers are nominated by the director of training, who is also the public school superintendent, though he is employed as a member of the college instruction staff. The board has appointed the teachers he has nominated for more than 20 years.

Last year 92 students did practice teaching in the public schools of Dillon. The enrollment of the elementary schools of Dillon was 475 in 1940-1941. The ratio of pupils to practice teachers was, therefore, 5.2 pupils to one student teacher. These facilities are not quite large enough to furnish adequate facilities for 92 teachers. For best results, the ratio should be 8 pupils to one student teacher. This allows for 4 practice teachers (two each semester) and 32 pupils for each critic teacher. The inadequacies for the last quarter are emphasized by the fact that 65 students practiced in the last quarter, and only 19 in the first quarter and 27 in the second quarter. Some of these students took work in practice teaching for more than one quarter.

For practice in the elementary schools, students receive 10 semester hours of credit for 250 clock hours divided one-fourth to college classes in the teaching processes, and three-fourths to observation and practice teaching - the amount of observation and practice varying with different students and with different critic teachers. Practice in the teaching of special subjects carries 2 or 4 semester hours of credit for 50 or 100 clock hours of practice.

The classes in teaching processes are taught by critic teachers, for the first time this year, in an effort to coordinate special methods with observation and practice teaching. All critic teachers, by turns, meet student teachers at 8 o'clock for instruction in methods. The student teachers are divided into primary and upper groups. Two critic teachers teach them arithmetic methods for a short time, then two critic teachers teach them language methods for a time, and so on for the other subjects. The method seems to be a very good one for correlating theory with practice.

Levels of Teacher Training: The question may well be raised as to the advisability of maintaining a four-year college at this institution. Last year, of 266 students, only 41 were juniors and only 20 were seniors. With the reduction of total enrollment to 191 students there are fewer juniors and seniors this year. The curriculum could be reduced to a few basic courses if work were limited to two years and if no training for departmental teachers were given.

It will be objected that a few teachers desire four years of training even if two years of training are all that is required for certification. The fact is that only two years of training are required and that few take more than two years of training, prior to teaching. It would be well, probably, to discontinue the two upper years, at least until the state requires four years of training of teachers for certification. Those teachers desiring more than two years of training, that is, the 41 juniors and 20 seniors

as of last year, could take their last two years of study at the state university or the state college. The discontinuance of the two upper years of college, until such time as the state shall require four years of training would make possible the offering of a relatively fixed curriculum, exactly that now furnished for the two-year certificate students. A staff of 9 or 10 equivalent full-time teachers could give all the work needed. This would eliminate the small classes now being taught.

Cost of Operating the Training School: The training school teachers are paid about the same by the college as they were paid five years ago, that is, from $250 to $600, but the school district has raised its pay to them as public school teachers from $1,050 to $1,350 a year. This is about what other districts pay their teachers, who are two-year graduates. Most of the critic teachers hold masters' degrees and all hold bachelors' degrees. The extra amount paid by the college pays for teachers of higher training qualifications than those of teachers in many other cities.

The cost, to the college, for practice teaching facilities in the public schools, plus observation facilities and instruction by critic teachers in methods of teaching may be estimated as follows:

Payment of critic teachers	$ 6,750
Instructor of English and physical education (half-time teacher in training school)	750
Instructor of fine art (half-time teacher in training school)	950
Director of training (city superintendent of elementary schools)	3,200
Clerk of training school	480
Total	$12,130

When it is considered that no payment is made for practice teaching facilities by Northern Montana College or by Eastern Montana Normal School, this seems to be pretty expensive laboratory facilities. Yet, the certificates issued to the two-year graduates of these two state institutions are exactly the same as those issued by the Montana State Normal College. If all this expense is necessary for the training of teachers, then similar arrangements should be made at Havre and at Billings. If it is not necessary, then this large amount should not be paid toward the support of the Dillon public schools.

It must not be supposed that the entire $12,130 would be saved by following the practice at the other colleges. A director of student teaching would have to be employed. The saving, however, would be about $9,130 a year if the college paid nothing toward the salaries of critic teachers and others who teach or administer the public schools of Dillon.

Placement: Last year the college placed 84 new teachers and 139 experienced teachers. At present, there is no difficulty in the placing of teachers in primary, intermediate, and grammar grades. More than half of the new teachers are placed in positions in rural schools. They have not had practice teaching in rural schools, but have practiced in two or three grades of the city school. That, however, is quite different from teaching in a rural school. Their practice teaching should be in rural schools, but it would be impossible to supervise their work in various rural communities, without great expense, so the present arrangement is the more practicable if less effective.

Summer Session:

Montana State Normal College operates a summer session for nine weeks each summer. Support for the summer session comes from the regular appropriation for the support of the institution. However, the cost is kept nearly equal to the receipts from fees. Enrollment of the summer session in recent years was 385 in 1933 and declined to 164 in 1941. The latest enrollment for the summer session was classified as follows:

	Number
Freshman	8
Sophomore	23
Junior	89
Senior	44
Total	164

Six of those students, classified as seniors, were graduates who had returned for postgraduate study with the senior class. In addition, a class of 30 primary children was held for laboratory purposes.

It will be noted that most of the enrollment of the summer session was of junior and senior grade. This results from the large number of teachers who return to college to complete their college study for graduation, while few of the regular students remain for the summer session.

In 1941, a total of 208 credit hours was taught. The 164 students were enrolled for 1,958 student credit hours. This is an average of about 12 credit hours, on the quarter basis, per student, which is equivalent to 8 semester credit hours. This is exactly the same basis as 16 semester credit hours for an 18 weeks semester.

The average size of classes, in the summer session of 1941, was as follows:

	Enrollment
Freshman	9.0
Sophomore	12.7
Junior	10.0
Senior	5.0
All grades	10.0

Only 13 of 67 classes had 15 or more students enrolled in them. It is suggested that fewer classes be taught in the summer session.

In 1940, instructors were paid only $275 for nine weeks of service. In 1941, they were paid $300. The salaries paid summer session instructors were as follows:

Number of Employes	Salary Rate
1 (outside instructor)	$350
9 (9 weeks)	300
2 (6 weeks)	200
1 (part time)	107
4 (not instructors - salary for 12 months)	-

The salary rates for the summer session are not high. The ratio of students to instructors, however, is only 164 to 11.8, or 13.9 students to 1 instructor. This is a low ratio, but is slightly higher than the ratio of students to instructors in the regular session.

Extension Services:

The institution offers no extension class work. Extension classes, occasionally, have been taught in Butte, but there has not been enough demand for classes in late years to warrant their being taught.

Last year, 100 students were enrolled for correspondence study. In 1930-1931 there were 258 such students enrolled, but the number has declined. The 100 correspondence students were enrolled for 459 student credit hours, on the quarter basis, and were enrolled for 127 courses.

Fees have been charged at the rate of $2.50 per credit hour on the quarter basis, with 50 cents, additional, per credit hour for postage. The fees have now been changed to $3.75 per semester credit hour, with $1 per course, additional, for postage. Last year fees were as follows:

Credit hour fee	$1,147.50
Postage	229.50
Total	$1,377.00

Instructors are paid 40 cents per lesson, which amounts to $6.40 for each 4-credit course. The earnings of instructors seldom exceeded $100 each.

It is recommended that correspondence study be discontinued at this college and be given from only one center in the state, namely, the state university. Since the work is carried on by mail, it can be carried on better from one center than from many centers. The same should also apply to extension class instruction. Carried on from one center, the standards of correspondence and extension class instruction can be better protected, and duplication in the preparation of course materials will be avoided. In the case of a few courses like "intermediate method," "primary method," and "supervision" it will be necessary for the university to use the services of a teacher in this college, or in the normal school at Billings, and that may be desirable in other subjects, but there is no good reason for preparing such courses as freshman English, American history, and geography for correspondence study from four or five different state colleges.

Library:

The library consists of 22,936 bound volumes, of which 4,175 are bound magazines and government documents. The library is large enough for a college several times the enrollment of this institution. The library reading room will seat more students than are enrolled in the institution. At 20 percent of enrollment, which is the standard for library seating, it would need to seat only about 40 students.

About 18 percent of the books are duplicated copies. About 25 or 30 percent of the books are not used, or are very rarely used, according to the estimates of the librarian.

Last year, 410 volumes were added to the library, of which 360 volumes were added from appropriated funds, 28 from other funds, and 22 by gift. Last year, $826.68 was expended for library books. This is slightly less than is ordinarily required for a college of 266 students, but should have been adequate in view of the fact that the library is now well stocked with books.

The president and the librarian apportion the amount of money to be expended for library books among the departments and the librarian and the faculty select the books for purchase. The librarian may veto departmental requests for books in case the books are already in the library, in case they are too expensive, in case they are unnecessary, in case they have been superseded by later editions, and in case the requests include excessive amounts of highly specialized material to be used by individual instructors but of little use to students. There is no criticism of this procedure.

In view of the large number of books on hand for use by only 191 students, as of this year, it is recommended that the librarian make a list of all books that are not needed and submit the list to librarians of the other colleges of the state for their selection of any that may be useful in their libraries. Such a list should include most of the 18 percent of duplicated copies, most of the 25 percent to 30 percent that are not used and are not included in the duplicated copies, and other books that are rarely used in this college.

Textbook Rental System:

The college does not operate a bookstore but rents books to students at the rate of $2.50 a semester or $5 a year. The textbook library is operated by students under the direction of the business officer. The system is satisfactory from the standpoint of low cost to the student and no cost, other than general administration and the provision of quarters, to the state.

Student Welfare Enterprises:

Health and Medical Service: A health service fee of $2.25 a semester, or $4.50 a year, is charged. This fee produced $1,152.50 in 1940-1941. The cost of health service was $1,928.41 of which the salary of $1,000 for a nurse and a part of the medical supplies were paid from state funds. In addition, the nurse received full maintenance, valued at $50 a month.

Each student is given an annual health examination, hospitalization, and minor treatment. Last year there were 856 office calls and 605 infirmary calls, and 84 students were treated for minor ailments. Thirty-six students were in the college infirmary and three were in the city hospital. Students are admitted to the county hospital at special rates. Also, physicians of the city charge reduced rates to the college for service to students.

The college infirmary has three beds and nurse's quarters on the ground floor of the dormitory and two beds in another room.

The nurse has recently resigned. The nurse's salary constitutes the major part of the cost of health service. The college is small and much of the time there are no sick students. The employment of a nurse is not warranted and it is recommended that the position be not filled.

Residence Hall: The residence hall for women students has a capacity for 221 students and even more could be accommodated by slight crowding. Of the 191 students in the institution, 82 are men, which leaves 109 women students. Only 77 of the women students live in the residence hall, leaving unused capacity for 144 students, or more if more rooms should ever be required. Thus, about one-third of the dormitory capacity is used. One whole wing of the residence hall has been blocked off. The ground floor rooms are not being used by students.

Students are charged $7.50 a month room rent and $22.50 a month for board. The residence hall account is charged for repairs, heat, light, water, telephone service, the wages of domestic and janitorial help and with a part of the time of college employes devoted to its supervision.

Two cooks are employed for the dining hall. They are termed supervisors because, in addition to the cooking of meals, they supervise students who assist in the kitchen and dining hall. The dean of women, employed by the state, is in charge of the entire residence hall, including the dining hall.

In 1937, two old residence halls were razed. A part of one of the halls, however, was saved and repaired. A new residence hall was constructed where they stood. The two new parts and the old reconditioned part are now in one unit.

For the payment of the principle and interest on bonds issued for the purpose of constructing the new residence hall there was pledged the income from rentals of the rooms and the income from the "interest and income fund," which fund has been derived from the sale of lands, granted by the federal government for the training of teachers, and from the rental of unsold lands. This was all very unwise procedure, which might or might not have been foreseen in 1937. At any rate, enrollment in 1936-1937 had already

declined from 722 to 326 students. Now the dormitory is only about one-third occupied, but the whole dormitory, except the old reconditioned part, must be paid for. The capacity was far too great.

The bonds will draw heavily upon the income from the land grants for many years. In 1940-1941, there was due $4,000 on the principle and $3,360 for interest on residence hall bonds, or a total of $7,360 principle and interest. Residence hall earnings contributed $3,000 to the interest and sinking fund and $2,401.75 to the college revolving fund as an offset to money from the land-grant fund used for such payment, or a total of $5,401.75. This left not quite $2,000 as the land income contribution. With smaller use of the residence hall, this year, the land income will have to contribute more to the interest and retirement of bonds.

Insofar as land grant moneys are used to pay for the residence hall, there will be that much less for the support of the college and appropriations for the operation of the institution will have to be larger each year than would be the case if the "interest and income" were available for the partial support of the college.

Scholarships and Loan Funds: In 1940-1941, the institution had 17 students on high school honor scholarships and 7 on advanced scholarships. Sixteen of the number were freshmen, six were sophomores, one was a junior and one was a senior. This year there are only 13 freshman scholarship students and five upper class scholarship students.

The institution has 17 load funds, with a total value of $10,000 donated by various individuals or associations. Students of this institution, like students of other institutions in the University of Montana are eligible to secure loans from two loan funds administered by the executive secretary of the University of Montana.

Sponsored Student Activities:

An intramural sports program is carried on in the state normal college, independently of the intercollegiate athletics program. About 90 percent of the men and about 80 percent of the women participate in the sports. This is an excellent record. The work is well organized to promote participation by students.

The institution participates in intercollegiate football, basketball, and track, under the general control of an athletic committee of the faculty, that passes upon such matters as schedules as prepared by the coach. It is reported that no athletic scholarships or other payments are made by the college to athletes. Competitions are held with other colleges in the Montana College Conference, such as the smaller state colleges and two or three small

private colleges in the state. Income was $1,006.75 from contests, $1,667.50 from fees, and $346.22 from other sources, or a total of $3,020.47. Expenses are stated to have been exactly the same amount, but, in addition, the salary of a part time of the coach, for time devoted to coaching, is stated to have been $875. This was paid from state funds, and is the cost of the athletic program to the state.

Dramatics is well developed both in credit courses and noncredit activities. Several plays are presented each year in assemblies and before the public. Intercollegiate debates are held with the school of mines, the state college, and the state university, but no students participated in the oratorical contests. Both credit and noncredit work is given for glee clubs, a chorus, and an orchestra. Such groups perform in assemblies and before the public.

There are no fraternities or sororities, except a local organization of women students, under faculty supervision. Social functions are held under faculty supervision.

A college weekly newspaper is published, largely as a credit course in English, a course having from seven to twelve students enrolled. The college annual has been published for 35 years.

There is no organized form of student government, though there is a faculty-student committee to control the expenditure of student activity moneys. There is also a student house council at the resident hall, elected by students living in the hall. Most colleges find some form of student government worth while both as a measure of control and for training in citizenship.

Physical Plant:

Value: The state inventory value of the plant, as filed with the state purchasing agent on June 30, 1941, was as follows:

Grounds	$ 25,509.19
Buildings	721,076.20
Equipment	123,541.09
Total	$870,126.48

This year only 191 students are enrolled the first semester. Thus, the value of the plant is $4,556 per student. A few years ago a valuation of $1,200 or $1,300 per student was considered to be fully adequate. Now, it is likely that, with the stimulation of building by the federal government, valuations per student will be about $1,500 to $2,000 in most state colleges and universities of the United States. A valuation of $4,556 per enrolled student will give some notion of the surplus plant capacity in this institution. The cause has been the decline of enrollment, together with the construction of the new dormitory.

Adequacy of Plant: The campus consists of 14 acres of land at the outskirts of Dillon. The landscaping and upkeep of the grounds is good.

The residence hall is far too large for the needs of the institution. Not only are there many vacant rooms but a few surplus rooms are used for music practice rooms and others are used for the storage of unusued furniture. The unused furniture should be sent to other colleges, whenever requisitions for classroom seats, and such other excess furniture as is in this institution, come from other colleges.

The gymnasium, constructed in 1924, is fully adequate in size for the needs of the institution. The swimming pool, constructed in 1925, has faulty construction but would be adequate in size for the needs of an institution much larger than this college. The state planning board has included in the "future" capital outlay program the completion of the basement space in the gymnasium at an estimated cost of $12,000. There is no prospect that this work will be needed any time in the near future because there is no need for more spaoe.

The heating plant consists of two large rooms. One room has two boilers in it while the other is vacant, except that one end is used for a workshop. The building is large enough to house boilers that would heat twice as much area as the present buildings contain.

The main building was completed in 1897, with an addition 10 years later. It is not ideally construoted for proper lighting but is more substantially constructed than are the newer buildings, and has been well maintained.

The dining and recreation hall was constructed in 1921. It is large enough to serve about 300 students but only the 77 students who live in the dormitory board there.

The library was constructed in 1924. It will seat 300 students, which is six times as large as is needed.

Instruotion rooms are, as a rule, very large, so that the small classes do not begin to fill them. They are equipped with more than are needed of very expensive slate blackboards. The blackboard material is the right kind but the area need not have been so great. Rooms are equipped with tablet-arm chairs. In the main building, rooms are poorly lighted. The administration unit is housed in adjoining offices in this building.

Toilet room facilities are fully adequate for present, or greater, enrollment.

The auditorium is located on an upper floor, with a very small stage. It will seat about 500 students but is not very accessible or suitable for its purpose.

In the main, the buildings are adequate to house from 600 to 800 students without undue crowding.

Need for Repairs: Repair work is in charge of the superintendent of buildings and grounds and he does much of the repair work himself.

The gymnasium roof needs attention. The superintendent of buildings and grounds has tried to repair it, but without success. It needs a roof over the present roof. The swimming pool room has a concrete roof from which water drips in the winter months. It needs another roof, with air space between the two roofs. The swimming pool walls have been sealed, but water stands on them from the condensation of moisture of the air.

The shower rooms of the residence hall have no means of ventilation. Fungus grows on the walls and, in some cases, the plaster disintegrates from the constant dampness. Holes should be cut in the walls and exhaust fans should be installed.

The basement of the old dormitory is used as the dining hall. The wood floor is 20 years old and has warped and buckled badly by moisture that rises out of the ground. This room should have a concrete floor.

The gutters on the library building need repair.

When the library building was constructed in 1924, provision was made to house between 20,000 and 30,000 books on the stacks of the main floor, and two rooms on the floor below were intended to be used ultimately for additional stacks whenever the library required expansion.

In 1924-1925, the college had 543 students while now it has 191 students. If the library stacks were adequate then, they are far more adequate now. It is true that the number of books has increased, but those that are valuable, but not in use, should be distributed to institutions where they can be used and many of the old books are not worth 10 cents each on the market and can be destroyed. No consideration should be given to any plan to expand the stack space in the library unless the enrollment of the college should at some future time expand to over three times what it is now.

Operation and Maintenance: The superintendent of buildings and grounds has charge of heating, cleaning, groundswork, and repairs.

Two firemen are employed to operate the heating plant. Two firemen are needed because coal is the fuel used and the boilers carry 75 pounds of steam, and cannot be left with a hot fire.

Two janitors and a student are employed. Formerly, three janitors were employed. No janitors are present in the mornings. The firemen unlock the doors. The night firemen also serves as watchman.

The buildings are kept clean. Wood floors are properly preserved with a floor dressing having a bakelite base. Cement finished floors are painted. Tile and cement finished floors are mopped. Wood, cork, and linoleum floors are cleaned with a treated dry dust mop. The shower rooms and toilet rooms are mopped daily.

Glass is not cleaned very frequently but was clean at time of observation. Blackboards are cleaned daily if used. Erasers are cleaned by vacuum. Toilet rooms are kept clean. No deodorant is used except in the toilet room in the gymnasium. Its use there should be discontinued.

Receipts and Expenditures:

Means of Financing: The income of the institution for 1940-1941, exclusive of amounts received for dormitory rentals, was as follows:

Fees and sundry income	$11,124.29
Appropriation - salaries and expenses	65,687.44
Appropriation - railroad fare refunds	84.88
Interest and income	12,490.04
Total	$89,386.65

Income from dormitory rentals and the dining hall amounted to $28,086.07. This is kept as a separate account, the net earnings from which are used to retire bonds and pay interest on bonds issued for the construction of the building.

Fees and sundry income have declined in amount with the decrease of enrollment. In 1937-1938 income from this source was $14,716.38. In 1940-1941, only $11,124.29 was collected from this source. Income from appropriations was about the same in 1937-1938 as in 1940-1941. Income from "interest and income" was $14,601.23 in 1937-1938 and was only $12,490.04 in 1940-1941.

For each year of the current biennium there has been appropriated from the university millage fund $69,000. This is an increase of $3,000 a year above the appropriations made the last biennium, but there was a deficiency appropriation of $4,631.47 for that biennium.

The appropriation from the general fund is $12,500 each year for the current biennium, which is intended to offset fees now required to be deposited in the general fund. However, this much has not been collected for the last two years and with the great decrease of enrollment this year, there probably will be less than $9,000 collected at the institution for deposit in the general fund.

Expenditures: Expenditures for the fiscal year, 1940-1941, for operation and repairs and replacement, for the accounts general administration, the educational system, and the physical plant were as follows:

General administration - operation	$13,334.58
Educational system - operation	60,767.66
Educational system - repairs and replacements	106.43
Physical plant - operation	11,851.47
Physical plant - repairs and replacements	1,442.76
Total	$87,502.90

In addition, $24,857.91 was expended for operation and repairs and replacements for the dormitory and dining hall and $3,360 was expended for interest on bonds. Capital expenditures amounted to $1,549.34.

There has been little change in expenditures since 1937-1938 except that expenditures for operation of the educational system have declined about $3,500 and for operation of the physical plant, about $1,500.

Unit Costs:

Enrollment for the regular session of 1940-1941 was a gross total of 266 students. On the basis of the number of credit hours registered, the number of equivalent full-time students has been shown as 220. These do not include students in the summer session.

Total expenditures for "general administration," the "educational system," and the "physical plant," in 1940-1941, amounted to $87,502.90, or, when expenditures of $2,596.25 for the summer session are deducted, $84,906.65. Expenditures for operation, exclusive of repairs and replacements, amounted to $85,953.71, or, when expenditures of $2,596.25 for the summer session are

deducted, $83,357.46. These figures do not include expenditures for the residence hall, interest and the retirement of bonds, or capital outlays, nor for the summer session.

Using these two sets of figures, unit costs may be computed as follows:

Total cost per student enrolled	$319.20
Operation cost per student enrolled	313.37
Total cost per equivalent full-time student	385.94
Operation cost per equivalent full-time student	378.90

The last figure, $378.90, is probably the most significant unit cost figure. It has been computed by reducing enrollment to equivalent full-time student enrollment for the entire year and is on the basis of expenditures for operation, alone.

Expenditures for teaching the several subjects, omitting all administration expense, plant operation expense, library expense, summer school expense, and the like, may be divided by the number of equivalent full-time students in the subjects to determine the cost per equivalent full-time student for instruction in each of the several subjects. The results follow:

Subject	Number of Equivalent Full-Time Students	Expenditures for Operation	Cost per Equivalent Full-Time Students
French	2.0	$ 805.00	$402.50
Education and training school	45.7	13,997.20	306.28
Art	14.6	3,851.84	263.82
Industrial art	8.8	2,300.00	261.36
Physical education	10.1	2,557.92	253.26
Music	13.5	2,710.06	200.74
English	50.3	9,944.00	197.69
Science	16.8	3,300.00	196.43
Geography	7.1	1,125.00	158.45
Social studies	39.1	5,845.80	149.51
Mathematics	12.0	1,687.50	146.25
Total	220.0	$48,124.32	
Average			$218.75

The expenditures for operation, shown in the second column of figures, do not agree with the departmental costs as shown by the state accountant. The figures presented here have been refined by dividing the salary payments to faculty members in accordance with the proportion of time they devote to each subject taught by each of them.

The high unit cost of French is due to small enrollment. It is the most costly of all subjects in spite of the fact that only a part-time teacher is employed for the subject.

The high cost of instruction in education and practice teaching in the training school is due to the large amounts expended for operation of the training school and the relatively small number of student credit hours of observation and practice teaching.

When it is considered that the data are for instruction costs, only, it may be concluded that the cost per equivalent full-time student for teaching all the subjects is very high. The lowest cost subjects are geography, social studies, and mathematics.

Value and Cost of Services Rendered:

Montana State Normal College is a victim of past mistakes. The first mistake was made in 1893 when the institution was located in a small city, with a present population of less than 4,000 people, in a sparsely settled part of the state, and in the southwest corner, where it is accessible to few students.

The second error was in establishing two additional teacher training institutions at Billings and Havre. These institutions, with very limited physical plants have, because of better locations, robbed the older institution of its students, so that they have surpassed it in number of students, and the older institution has a large physical plant with only a few students to use it.

A third circumstance affecting enrollment in teacher training institutions is that there is little turnover in teaching staffs now so that fewer teachers need be trained. Whereas, formerly, the average term of service was four years, and this college had enrollments of from 500 to 700 students, teachers now have attained permanent tenure and retain their positions for many years.

A fourth circumstance is the general decline in college enrollment throughout the United States due to fewer high school graduates and more opportunities for work.

The state is confronted with the problem of what to do with this institution, the smallest college in enrollment in the state, but with a fairly large physical plant. It is suggested that consideration be given to the advisability of making the institution a two-year college. By discontinuing the two upper years, the expense of operating the institution could be greatly reduced because it is the many small classes for upperclass students that are expensive. The curriculum, using present staff so far as needed, could have the following two-year curricula:

General academic
Teacher training
Industrial arts
Music (doubtful demand)
Art (doubtful demand)

Teachers who desire two additional years of training can attend the state college or the state university to complete their study for a degree in social science, English, or some other cultural subject.

An alternative to this plan would be to close the institution and use the buildings for some other purpose if there is any need for them by other institutions in the state government.

Another alternative would be to close other institutions, where plant facilities are inadequate and to send the students of those institutions to Dillon. This is not recommended because the other institutions are more favorably located.

The last alternative, presented here, is to operate the institution, as at present, as a high cost college. This is not recommended.

Summary of Recommendations:

On the basis of the data that have been presented and in summary of the suggestions made in the body of this report of a study of Montana State Normal College, it is recommended:

Recommendations Not Requiring Legislation:

(1) That, as a measure of economy to make possible the operation of the college with not more than half of the present teaching staff, the junior and senior years of the curriculum be discontinued until such time as the state shall require four years of training for the certification of elementary school teachers.

(2) That, for the purpose of using the physical plant of the college to more nearly its capacity, and to furnish economical education to more students, consideration be given to the possible advisability of operating the institution as a general junior college.

(3) That, if all present positions are to be retained, there be some plan of grouping of instruction employes into two or three departments, with some member designated as head of each department, in order that there will be fewer employes responsible directly to the president of the institution.

(4) That the number of credit hour offerings be further reduced because the several curricula are very similar and requirements for the teachers' certificate allow little opportunity for free election of courses.

(5) That courses that are not taught be omitted from listings in the college catalog on the ground that the listing of dead courses will tend to confuse rather than to help students in planning their curricula.

(6) That courses that are highly specialized or not related to the interests and needs of elementary school teachers be discontinued.

(7) That, if the four-year curriculum is continued, the offerings for majors for juniors and seniors be reduced to two or three subjects, such as English and social studies.

(8) That, if any new courses, such as home economics, are added, they be used to displace courses already included in the teacher training curriculum, and that the staff be correspondingly changed.

(9) That courses of small enrollment, repeated in a second or third quarter, or in a second semester, in one year, be taught only in one semester in the future.

(10) That some of the courses of small enrollment be combined with other classes of related subject matter as a means of increasing class size.

(11) That most classes having from one to four students enrolled and many classes having from five to nine students enrolled be discontinued.

(12) That some of the classes having from five to fourteen students enrolled be taught only in alternate years as a means of increasing their enrollment.

(13) That, when courses are offered in alternate years, a statement be included in the catalog description of each course to indicate the year in which the course will be taught.

(14) That, as a measure of economy, the number of instruction positions be decreased when there are resignations or deaths or when some of the instructors can be shifted to other colleges that may have need for them.

(15) That, as a measure of economy, and to conform with the practices in the two other teacher training institutions, the payment of a part of the salaries of 16 critic teachers, a part-time clerk, the city superintendent of the elementary schools (director of training), and a part of the time of other college instructors, who teach in the public schools, be discontinued.

(16) That the position of secretary of the appointment office be discontinued and that placement work be done by the secretary to the president or the registrar.

(17) That extension class and correspondence study be discontinued at this college and be given under the central direction of the state university.

(18) That enrollment in summer session classes be increased by reducing the number of summer session classes taught.

(19) That, because of the large library for the small number of students, the librarian submit to the librarians of other institutions of higher education in the state a list of excess books, such list to be made up of duplicated copies, or of copies that are not being used or are used but little, from which those receiving the lists may select books that will be useful in their libraries.

(20) That excess classroom and other furniture, now stored in unusued dormitory rooms of the residence hall be sent to other colleges when such colleges make requisition for similar articles.

(21) That student government be organized in the institution.

(22) That there be no expansion of the physical plant of this institution, due to the present gross overcapacity of the present physical plant.

(23) That additional roofs be provided for the gymnasium and the swimming pool.

(24) That exhaust fan ventilation be provided for the dormitory shower rooms.

(25) That a concrete floor replace the warped and buckled wood floor of the dining hall.

(26) That the gutters of the library building be repaired.

Recommendation Requiring Legislation:

(27) That the legislative assembly carefully consider the advisability of discontinuing the college.

STATE OF MONTANA

GOVERNOR'S COMMITTEE ON REORGANIZATION

AND ECONOMY

MONTANA SCHOOL OF MINES

(Report No. 40)

November 20, 194

Prepared by

Griffenhagen & Associates

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REPORT ON

MONTANA SCHOOL OF MINES

Introduction:

When Montana was admitted to the union as a state, in 1889, there was granted, for the support of a school of mines, 100,000 acres of the public domain. Some of this land has been sold and the proceeds constitute a permanent fund for the support of the school of mines. The expenses of the school of mines are met from legislative appropriations and the interest from invested funds and rental of unsold lands of the land grant.

The Montana school of mines was established by legislative act in 1893, and was to be located at Butte. Construction of the first building was begun in 1896 but the building was not completed and equipped for use for several years. In 1900 the school of mines was opened.

The institution is a part of the university of Montana, which comprises all of the state-supported institutions of higher education. General control of the institution is vested in the state board of education.

In 1919, the legislature created the state bureau of mines and metallurgy as a branch of the Montana school of mines. In 1929, the title of the bureau was changed, by legislative act, to state bureau of mines and geology. The bureau is the research agency of the school of mines, but it receives separate appropriation for its work.

Extent of Services Rendered:

Location: Montana school of mines is located at Butte, Montana. This is a fortunate location for the state school of mines for several reasons. Butte is the largest city in the state and can furnish rooming facilities for students, which would make unnecessary the operation of a dormitory, but one is in operation. It is located in the most important mining region of the state, where there is a natural laboratory for the study of mining. It is located between the state college and the state university, and too near each of these institutions, but its senior college and graduate work are not duplicated in either of these institutions.

Territory Served: The extent to which the school of mines serves a local or widespread area of the state may be shown by the distances of the homes from which students come to the school. The distances of the homes of enrolled students, from the institution, for the regular session of 1940-1941, were as follows:

Distances of Homes of Students from Butte	Enrolled College Students Number	Percent
Within 10 miles	160	45.4
From 10 to 50 miles	27	7.7
From 50 to 100 miles	15	4.3
More than 100 miles	150	42.6
Total*	352	100.0

*Elsewhere the figure for total enrollment is given as 353 and 355.

Since the school is a specialized institution, located in a large city in which the occupation of the people is largely that of the institution's specialty, it would be expected that a fairly large proportion of the students would be local. The number of local students, however, is increased by the addition of freshmen in the general curriculum. In spite of these considerations, nearly half of the students come from homes more than 50 miles from the institution.

Non-Resident Students: One of the reasons that the proportion of students from a distance is as large as is shown is that there are large numbers of students from other states and foreign countries. The number of out-of-state students, in 1940-1941, was as follows:

	Graduates	Under-graduates	Total
Canada	1	19	20
India	-	3	3
Iraq	-	2	2
Chile	-	1	1
Liberia	-	1	1
Dutch West Indies	-	1	1
China	-	1	1
British West Indies	-	1	1
Bermuda	-	1	1
Alaska	-	1	1
Philippines	-	1	1
Western states	3	15	18
Mid-western states	2	12	14
Eastern states	-	3	3
Total	6	62	68

Out of 352 students enrolled last year, 68 were not residents of Montana. Thus, 19.3 percent of the enrolled students, or nearly one out of five, were residents of other states or foreign countries. A special non-residence fee of $75 a year is charged out-of-state students, which, with the regular fees amounting to $80 a year, makes the charges to out-of-state students $155 a year. A few other minor fees for certain students would, in some cases, increase the total charges. However, this is far less than the cost of instruction of out-of-state students. It will have to be conceded that the presence of students from other states and other countries is beneficial to the work and helps to keep the standards of the school high, and this would be true in any state, but the people of Montana should realize that not all of the expenditure for the school of mines is for the education of Montana students, though some of the non-resident students may remain in the state and become Montana residents.

Only two of the out-of-state students were attending on scholarships and these were cancelled, so that non-residence fees are now being charged to all non-resident students.

Growth and Size of the Institution: The growth and size of the institution may be shown as follows:

Year	Regular Session
1930-1931	216
1933-1934	252
1936-1937	296
1939-1940	350
1940-1941	353
1941, October 29	293

It is likely that the enrollment, as of October 29, 1941, will be nearly the entire enrollment for the school year 1941-1942. While the largest enrollment, of the years shown, was in 1940-1941, the total enrollment this year will probably be about the same as in 1936-1937.

If it is assumed that no additional students will register the second semester, enrollment this year would be 11.3 percent under enrollment of last year.

The explanation for the drop of enrollment is largely the increased number of jobs open to young men who are partly trained. Boys in the mines earn $6.75 a day and are deferred from the draft because mining is a vital defense industry. The institution will probably lose more students than it gains during the year. Representatives of certain defense manufacturing industries have been to the school of mines to secure workmen.

Functions:

The law states that the school of mines "has for its object instruction and education in chemistry, metallurgy, mineralogy, geology, mining, milling, engineering, mathematics, mechanics, drawing, the laws of the United States, and of the state in reference to mining and the rights and duties of citizens in relation thereto."

The latest catalog of the Montana school of mines makes the following statements relative to the functions of the institution:

"Montana school of mines aims primarily to prepare students for service in mining, metallurgy, mineral dressing, and geology, the four main branches of the mineral industry. With this end in view, special emphasis is placed upon the teaching of mathematics, physics, chemistry, and other fundamental engineering subjects. Although a large proportion of the graduates find their life work in the mineral industry, the courses of study are designed to give a broad training in all forms of engineering." - page 11.

"The functions of Montana school of mines is to aid, through teaching and research, the development of the mineral industry of the state." - page 30.

The president of the institution states the functions of the institution as follows:

"(1) The major function of Montana School of Mines is education for the mineral industry. For convenience the work is divided into three curricula (1) Mining Engineering, (2) Metallurgical Engineering, and (3) Geological Engineering.

"(2) The second major function is research in the mineral industry which is carried on by the state bureau of mines and geology, a department of Montana School of Mines.

"(3) A wholly subordinate function of Montana School of Mines at present is the maintenance of a one-year general course authorized by the state board of education in 1926 for the convenience of local students, who are thereby enabled to complete one year of college work before transferring to other institutions for courses not offered at Montana School of Mines. At the present time enrollment in this course comprises ten percent of the total."

Accreditation:

The institution is fully accredited by the northwest association of secondary and higher schools. The three engineering departments are accredited by the one engineering accrediting agency, namely, the engineers' council for professional development. This council consists of six national engineering societies.

General Control:

Section 841 of the Revised Codes of Montana for 1921, placed the school of mines under the control of the state board of education, along with the other institutions that constitute the university of Montana. The amendment in Chapter 160 of the Laws of 1925, probably through error, omitted the school of mines in the enumeration of institutions under the control of the state board of education. This error was continued in Section 841 of the Revised Codes of Montana for 1935. This error should be corrected at the next legislative assembly by including the school of mines in the enumeration of institutions under the "general control and supervision" of the state board of education.

In Section 836 the "Montana school of mines" is listed with the other institutions in the provision that the state board of education shall have "general control and supervision" over various educational institutions of the state. The institution operates under the general control and supervision of the state board of education.

The law provides for the appointment of a local executive board consisting of three members. It has only nominal duties. It meets once a month to approve claims and for discussion of matters of general policy that have arisen during the month. The members of the local executive board are paid $5 for each meeting attended, or $60 a year if they attend 12 meetings a year. They usually return their checks and the checks are deposited in the student loan fund.

The law provides that the state board of education shall appoint a chancellor of the university of Montana, of which the school of mines is a part, but this office has not been filled for several years. The board now consults an executive council, consisting of the six presidents, for advice on matters relating to the university of Montana that affect more than one of the institutions. Otherwise, the several presidents are responsible directly to the state board of education.

Admission of Students:

No provision is made for recruiting students, except that faculty members sometimes give addresses to high school pupils on the subject of the mineral industry.

A faculty committee on admissions and advanced standing is responsible for final decisions as to qualifications of student applicants.

The requirements for admission are that an applicant (1) must be at least 16 years of age, (2) must present evidence of good moral character, (3) must have completed a four-year high school or preparatory course, with at least 15 units of credit, and (4) must have specified amounts of credit in certain subjects and groups of subjects. The subjects required are as follows:

3 units of English.
1 unit of American history and government.
(Three of the following groups)
2 units of four specified units in mathematics subjects (For engineering, 1½ units must be in algebra and 1½ units must be in geometry - or 3 specified units are required).

2 units of 12 specified units in history and social science subjects.
2 units of 11 specified units in science subjects (For engineering, one unit must be in either chemistry or physics).
2 units in some one foreign language.

Ten of the 15 units required for admission are specified subjects or groups. These requirements and the requirements for admission of freshmen on examination; the requirements for admission of special students, and their becoming regular students; the method of admission of advanced students; are all satisfactory, in that they will tend to select students on the basis of ability to learn the kind of subjects taught at this institution.

Last year nine students were eliminated by the close of the first semester because of low grades and four voluntarily withdrew

Classification of Students:

The 355 students in 1940-1941 were classified as follows:

Classification	Number	Percent
Special	2	0.6
Freshman	120	33.8
Sophomore	91	25.6
Junior	66	18.6
Senior	56	15.8
Graduate	20	5.6
Total*	355	100.0

* Elsewhere the figure for the total enrollment is given as 352 or 353.

Sixty percent of the students of the school of mines were enrolled at the junior college level and 40 percent were enrolled at the senior college and graduate levels.

Organization and Staff:

The internal organization of Montana school of mines is as follows:

Title of Position	Months Employed	Number of Positions	Annual Salary
President (also professor of mining engineering)	12	1	$5,292
Secretary to the president	12	1	2,000
Stenographer (by hour, $0.50)	12	1	-
Professor of mining engineering	9	1	4,200
Associate professor of mining engineering	9	1	3,200
Fellow	9	1	540
Research professor of mineral dressing	11	1	3,700
Fellow	9	2	540
Professor of metallurgy	9	1	3,600
Instructor of metallurgy	11	1	1,900
Fellow	9	1	540
Professor of geology	12	1	4,200
Assistant professor of geology	11	1	2,600
Assistant	9	1	675
Professor of chemistry	9	1	3,800
Professor of chemistry	12	1	2,000
Assistant	10	1	900
Assistant	9	1	750
Professor of physics	12	1	3,200
Assistant professor of mathematics	10	1	2,200
Assistant professor of mathematics and director of athletics (responsible to president as director of athletics)	9	1	3,000
Assistant in physical education (part time)	9	1	450
Professor of history, economics, and English	9	1	3,200
Instructor of English	9	1	2,100
Assistant professor of foreign languages	9	1	2,400
Assistant professor-librarian	12	1	2,100
Assistant geologist	12	1	1,800

(Cont'd)

Title of Position	Months Employed	Number of Positions	Annual Salary
Professor, registrar, and business manager	12	1	$3,200
Assistant in registrar's office	12	1	1,140
Housemother (also various kitchen help under the direction of the housemother) - not on college payroll	12	1	-
Campus foreman	12	1	2,300 (a)
Fireman	12	2	2,060
Janitor	12	3	1,660
Carpenter	12	1	1,800

(a) Also house

The number of months of employment given for each employe is the number of months he states he is employed, though some of the statements were rather indefinite and, in some cases, may not have been interpreted correctly. The reason employes were not always certain of the number of months they are employed is that they are all paid during the 12 months of the year, but the instruction employes are employed for varying numbers of months of service. In addition to the nine months of instruction some teach field classes for three weeks or four weeks in the summer or carry on research for varying lengths of time in the summer months.

The librarian is given the title of assistant professor. The registrar and business manager is given the title of professor. Professorial titles are not descriptive of the work of these employes. It is recommended that these titles be dropped and that the employes be designated only as librarian and as registrar and business manager.

Ten faculty members, or nearly half of the total number, are professors. Only one is an associate professor. It would be advisable to make the professorships a little more difficult to attain and to use the rank of associate professor for more members of the instructional staff.

The instruction staff is fairly well qualified for its work. Nearly one-third of the members hold an earned doctor's degree and more than half of the members hold degrees representing graduate study.

Experience in other institutions of higher education and in other lines of work related to teaching has been, on the whole, satisfactory, though a few members of the staff are not well qualified either by formal training or breadth of related experience. These few poorly qualified members of the staff should be replaced by better qualified members.

As to other measures of qualification, such as professional honors received and contributions to learning in the individual's specialty, it may be said that there are six or seven outstanding men on the faculty of the institution, but there are others who have done little to advance their fields of learning and who have received no significant professional recognition.

Scope of Educational Activities:

Courses Offered and Taught: The number of courses offered in 1940-1941 was 134. Of these 132, or 98.5 percent were taught. When reduced to a credit-hour basis 98.1 percent of the credit hours offered were taught. This is an excellent record, and shows practically no padding of the college catalog. In other words, the school has a definite curriculum designed to gain specific ends and it does not list courses that are not required for its purpose.

The average number of credit hours per course, however, is only 2.4. Many courses carry only one or two semester hours of credit. It would seem to be desirable, educationally, to consolidate courses of related subject matter, having only one or two hours of credit. The advantage would be to maintain closer relationships between units in allied subject matter fields and to reduce the number of different courses that would be required of students.

Curricula: The curricula offered by the school of mines are as follows:

Mining engineering
Metallurgical engineering
Geological engineering
Graduate courses leading to the master of science degree
One-year general curriculum

In the freshman and sophomore years, and the first semester of the junior year, students in the three engineering curricula take work in a combined engineering curriculum. In fact, a student is eligible to take work in any one of the three curricula until he begins the second semester's work of the junior year. It is only in the second semester of the junior year and the senior year that the work is separated into three curricula.

The requirements for the master of science degree include graduate courses for at least two thirds of the work above the bachelors degree, a grade point average of 2 or more in the student's major field, an acceptable thesis representing research by the student, and several other requirements. Much of the graduate work consists of individual work in laboratories under the direction of professors, rather than of formal class meetings. The requirements for the masters degree are satisfactory.

In 1940-1941. thirty of the freshmen were enrolled in the general curriculum, which consists of one year of college training of high school graduates who expect to transfer to some other college to complete work for the degree. This year 26 freshmen are enrolled in the general curriculum. These freshmen can enroll in courses with engineering students in English and either chemistry or mathematics. Special courses included in the general curriculum for freshmen but not in the engineering curriculum for freshmen are a full year of history and a full year of a foreign language, the latter of which may be French, Spanish, or German. Also, a special teacher of physical education for girls must be employed on a part-time basis.

Each foreign language is taught in two classes, one being advanced, for students who have had the language in high school, or those who have taken the first year of foreign language. The only other students, who would take a second year of foreign language, would be general students who return to pick up some credits for their second college year or engineering students who had not fully met the entrance requirements and were required to make up high school deficiencies.

There is a real question as to whether or not the school should continue to offer the general curriculum to freshmen. It requires additional courses. It is unrelated to the legally authorized work of the school of mines. There has been some demand for a second year in the general curriculum, made by students who have completed the first year, and some of the general students do stay on a second year to pick up a few credits before applying for admission to another college. Anyway, the courses designed for engineers are not very suitable for study by general students, and their presence in the courses will not improve them from the standpoint of the training of engineers.

A possible reason for continuing the general one-year curriculum is that its discontinuance might cause the establishment of a local junior college in Butte. This might not be objectionable, but students from the junior college would undoubtedly demand admission to the third year of the school of mines and it is possible that they would not be properly qualified for that advanced standing. The school of mines would have to be firm in the application of its rules relating to advanced standing. This it has to do now for transfer students from other colleges.

It is recommended that the general curriculum of the school of mines be discontinued. The enrollment of 30 general curriculum students is small, but the number may increase. Mining schools can easily lose their identity as mining schools by an influx of several hundreds of general students. The situation is fraught with danger to the interests of mining education in the state of Montana.

Need for Expansion: Fields related to the mineral industry, not now included in the curriculum, are the following:

Petroleum geology
Petroleum engineering
Coal mining
Ceramics (including clay products and other non-metallic mineral substances)

There is no question but that if curricula were offered in these fields, some students would enroll. However, the school has less than 300 students and these additional curricula would be more likely to weaken the existing curricula by drawing students from them than to draw additional students. Such curricula would require additional faculty members and would result in higher costs per student in the institution.

Instead of establishing these curricula, it would be advisable for the state to pay the out-of-state fees of students, who wish to specialize in these fields of mining and engineering, for their attendance at schools in other states. This is recommended as a policy to be followed in preference to the establishing of new curricula in the school of mines. This would not be likely to cost more than $2,000 or $3,000 a year.

Graduation Majors: Last year there were 56 seniors. Of these, 48 were graduated, all with the bachelor of science degree. These, who were graduated, majored in the three curricula as follows:

	Number of Majors
Mining engineering	25
Metallurgical engineering	13
Geological engineering	10

It appears that, so far as numbers of graduates are concerned, mining engineering is the most important curricula leading to graduation.

Graduate Study:

Last year there were 20 graduate students. This year there are 12 such students. They are working for advanced degrees. Some separate classes are held for them, but the work is primarily guided laboratory work and research. Graduate students from other institutions take some undergraduate work. Some of the graduate students assist in instruction as fellows or assistants. Ten of the graduate students of last year received master's degrees.

Graduate work is offered in mining engineering, geological engineering, metallurgical engineering, and mineral dressing. Only one year of graduate work is offered in each field. Only 10 courses, last year, were restricted to graduate students. Four of the students were fellows, with stipends of $540 each. Three graduate assistanceships, with stipends of $675 and $750, were granted.

Research - Montana State Bureau of Mines and Geology:

The law provides for the establishment of a "department to be known as the Montana state bureau of mines and geology" of the school of mines to be under the direction of the state board of education. The board is charged with the duty of appointing a qualified mining engineer as director of the bureau and such assistants and employes as are necessary.

The appropriation for the last biennium was $10,000 a year. For the present biennium it has been reduced to $9,200. The board has appointed the president of the school of mines as director of the bureau and several professors as assistants. A draughtsman and statistician, at a salary of $1,800, is the only full-time employe of the bureau. The salaries of the president and these professors, as stated elsewhere, include amounts allowed for research in the bureau. Research productions are published in limited numbers in mimeographed form. Nearly all are out of print. About 1,000 copies are usually mimeographed and about 300 of these go to libraries, as exchanges, and to other geologists. It would be well, when stencils have been cut, to mimeograph more copies of those contributions that are likely to be most in demand. Also, to prevent waste of the research bulletins, it would be well to charge more than 15 cents a copy for each booklet. Perhaps 50 cents and $1.00 would be adequate to prevent their being requested by persons who have no use for them.

The law specifies 11 "objects and duties" of the bureau of mines and geology. These are as follows:

(1) To collect, to compile, and to publish statistics relative to Montana geology, mining, milling, and metallurgy.

(2) To collect typical geological and mineral specimens and samples of products; to collect photographs, models, and drawings of appliances used in the mines, mills, and smelters of Montana.

(3) To collect a library and a bibliography of literature pertaining to or useful for the progress of geology, mining, milling, and smelting in Montana.

(4) To study the geological formations of the state, with special reference to their economic mineral resources, both metallic and non-metallic.

(5) To examine the topography and physical features of the state with reference to their practical bearing upon the occupation of the people.

(6) To study the mining, milling, and smelting operations carried on in the state, with special reference to their improvement.

(7) To prepare and to publish bulletins and reports, with necessary illustrations and maps, which shall embrace both a general and a detailed description of the natural resources and geology, mines, mills, and reduction plants of the state.

(8) To make qualitative examinations of rocks and mineral samples.

(9) To consider such other scientific and economic problems as in the judgment of the state board of education are of value to the people of the state.

(10) To communicate special information on Montana geology, mining, and metallurgy.

(11) To cooperate with the other departments of the university of Montana, with the state mine inspector, and with other departments of the state government as may be mutually beneficial; and to cooperate with the United States geological survey and with the United States bureau of mines, in accordance with the regulations of those institutions.

The law requires that a report be made to the legislative assembly showing the progress and condition of the bureau, and that regular and special reports of the bureau, with proper illustrations and maps, shall be printed and distributed as the state board of education may direct, and as the interests of the state and of science and industry may demand.

As the bureau of mines and geology functions, it is the organized research agency of the professors and it attempts to examine the mineral resources of the state and it issues bulletins. Much of the work is done in the summer and is prepared for publication during the school year.

It is impossible to distinguish which part of the work accomplished by the school of mines is the work of the school and which is the work of the bureau of mines and geology.

In addition to the research work, and the research bulletins that are published, a professor, without charge to the sender, analyzes rocks sent in by citizens. About ten packages of rocks are received each day. At the time of observation, many rocks were on hand awaiting analysis. After analysis the rocks are classified and kept for a month and the result of the analysis is sent to the sender. Little or no assaying is done because it would place the school in competition with commercial assayers.

The staff consists of a part of the time of five professors, a part of the time of five instructors and assistants, and one full-time employe.

The expenditures for last year were as follows:

Geology	$ 6,945
Mineral dressing	875
Metallurgy	735
Ceramics	424
Mining	750
Administration and general expense	1,217
Total	$ 10,946

The total of the amounts shown as having been expended for the several fields of study is somewhat larger than the total shown as having been expended for the bureau of mines and geology in the financial statement for 1940-1941. No attempt has been made to reconcile these figures with those of the financial statement.

The amount expended is more than the amount appropriated for the bureau. Most of the expenditure is for geology. It would seem that there should be a better distribution of the funds among the several departments.

The Glacier Production Company gave the institution $500 for research last year. More funds should be provided by commercial companies for specific research studies by students in the institution.

Some of the more significant studies have been those on artesian wells, the Jardine mining district, Revais Creek platinum occurrence, the Highland mining district, spectrographic studies of Montana ores, and the porosity of cut bank sands.

The state can well afford to support research work in mining and geology. However, much of the support should come from private sources. The support of the state should be only enough to insure a capable staff of research talent for the institution. It is recommended that the authorities of the institution solicit private concerns (1) for statements of problems they need to have solved and (2) for funds for the employment of research workers to solve them. The appropriations have been reduced from $14,875 in 1938-1939 to $9,200 in 1941-1942. Appropriations for the bureau should not be further reduced.

Size of Classes:

Class Enrollment: The distribution of classes, according to enrollment size, for the regular session of 1940-1941, was as follows:

Number of Enrolled Students	Number of Classes of Each Enrollment: First Semester	Second Semester	Total Number	Total Percent
1 - 4	6	9	15	8.3
5 - 9	5	6	11	6.1
10 - 14	11	12	23	12.7
15 - 49	46	54	100	55.2
50 - 74	15	7	22	12.2
75 - 99	4	4	8	4.4
100 - 149	2	-	2	1.1
Total	89	92	181	100.0

It should be noted that 55.2 percent of the classes fell within the satisfactory class size of 15 to 49 students. Also, 27.1 percent of the classes had fewer than 15 students, of which 14.4 percent had fewer than 10 students. Some of the classes were larger than is desirable in a specialized engineering school or in any other type of college.

Average enrollment in classes by student classification, for 1940-1941, was as follows:

Classification	Average Class Size: First Semester	Second Semester
Freshman	40	33
Sophomore	35	38
Junior	36	29
Senior	25	30
All classes	34	30

The average size of class is lower in the last half of the junior year and in the senior year. This is due to the division of the last three semesters of a student's attendance at college into three distinct engineering curricula.

While the average size of classes for the school as a whole was very satisfactory there were too many very small and too many very large classes as was previously shown. With a decline of more than 11 percent in enrollment this year, it is likely that the average class size will be smaller this year than was the case last year.

Subjects of Small Enrollment: The number of classes of small enrollment, in the first and second semesters, was as follows:

	Number of Classes of Small Enrollment			
	From 1 to 4 Students		From 5 to 9 Students	
	First Semester	Second Semester	First Semester	Second Semester
Spanish	1	1	2	-
French	2	-	2	-
German	1	-	1	-
English	-	2	-	-
Chemistry	1	-	1	-
Physics	-	-	-	2
Mathematics	-	1	-	-
Geology	-	-	-	2
Mineral dressing	1	1	2	-
Metallurgy	-	-	-	1
Ceramics	-	-	1	-
Physical education	-	-	-	1

Of these 20 small classes, nine were classes limited to graduate students, several of the nine being thesis classes. These are to be expected in a small school giving work for an advanced degree. Of the 17 remaining small classes, ten were in foreign languages. Hence, if the problem of small classes in foreign languages were solved, the problem of small classes in the institution would be very largely solved.

Foreign languages are not included in the engineering curricula. These subjects would need to be taken only by students of the general curriculum or by students who need to make up high school deficiencies. Foreign languages are excellent subjects for students to study, but it is a waste of state funds to teach a foreign language for a class of from one to four students, and four of the ten small foreign language classes had only from one to four students.

It is recommended that only one foreign language be offered and that the other two be discontinued. Probably the foreign language to be retained should be the one having greatest enrollment.

Subjects of Large Enrollment: Six classes the first semester and four the second semester had 75 or more students enrolled. Two of these classes the first semester had more than 100 students enrolled. The large classes were held in the following subjects:

	Number of Classes	
	First Semester	Second Semester
English	1	1
Economics	1	1
Chemistry	1	1
Mathematics	2	1
Geology	1	-

These extremely large classes should be divided into sections to reduce their size. With the decrease of more than 11 percent in enrollment this year, it is likely that the problem of large classes has been partly solved.

Work Loads of Instruction Staff:

Hours of Service per Week: Each member of the instruction staff was requested to state the number of hours he devoted, last year, to each of five instruction duties and each of ten non-instruction duties. The results in hours of work per week follow:

	Hours
Range	41 to 74
Teaching average	45.6
Other duties average	10.4
Total time per week	56.0

An average of 56 hours of work per week is rather more than would be expected for a faculty in an institution of higher education. Much of the time devoted to other duties, by several of the professors, is devoted to research. The type of research done by some members of the staff is creative and absorbing, so that they devote many hours to it. The hours required for teaching probably will be less this year, since enrollment is 11.3 percent less than last year.

Measures Of Teaching Load: The number of hours per week, that faculty members devote to teaching and other duties, is not the only measure of the work of college instructors. Three commonly used measures of the teaching loads of college instructors are the number of equivalent full-time students per instructor, the number of credit hours taught per instructor, and the number of student credit hours taught per instructor. These ratios will be computed in the paragraphs that follow.

Students per Instructor: Some students register for part time work, some register for only one semester. Hence, total enrollment is not a good measure of the work done in the regular session by an institution. To determine the work of an institution, the number of equivalent full-time students should be computed. This number may be computed by dividing the total number of registered student credit hours for the two semesters by the average number of credit hours a full-time student will need to carry in order to complete one of the four years of his college course.

There were 6,924 student credit hours registered the first semester and 5,725 student credit hours registered the second semester, or 12,649 student credit hours for the year. Engineering students in the school of mines studied, on the average, 40 semester hours of work a year. However, the number of credit hours for the 30 freshmen of the general curriculum was less than 40 and the number of credit hours for the 20 graduate students was less than 40. It would seem that

an equivalent full-time student in the school of mines may be considered, on the average, as one taking about 38 credit hours a year.

A division of the total number of student credit hours by the number of credit hours allowed for the average full-time student, gives a total of 333 equivalent full-time students for 1940-1941.

The number of equivalent full-time instructors is computed by considering each instructor as a full-time instructor, unless he is employed as a part-time instructor, or for one semester only, in which case he is considered as a fraction of an instructor, or unless he devotes time to some major administration or supervisory activity, in which case the fraction of his time devoted to teaching is used in the computations. Minor duties, such as all faculty members perform, are disregarded. Computed on this basis, there were 14.7 equivalent full-time instructors in 1940-1941.

A division of the number of equivalent full-time regular session students, 333, by the number of equivalent full-time instructors, 14.7, is 22.6. Hence, in 1940-1941, there were 22.6 equivalent full-time students per equivalent full-time instructor. This is rather high as a ratio, but not more than is being done, in recent years, in many other educational institutions in the United States.

While no summer session is held in the institution, intersession classes are held in geology and surveying. The work of these classes was included in the data submitted. While the number of student credit hours in the intersession classes is small, they would slightly increase the ratio of equivalent full-time students to an equivalent full-time faculty member. It may be estimated that if the intersession classes were omitted, the ratio would still be about 22 equivalent full-time students per equivalent full-time instructor.

Attention should be called to the fact that the drop of 11.3 percent in enrollment this year, and the loss of only one instructor, will slightly reduce the ratio below that of last year.

Credit Hours per Instructor: The average number of credit hours a semester per instructor is determined by dividing the total number of credit hours taught by all instructors by the total number of equivalent full-time instructors. Sections of the same class are counted as different classes. In 1940-1941, there were 241 credit hours taught the first semester and 244 credit hours taught the second semester, or an average of 242.5 credit hours a semester. The average number of credit hours, per equivalent full-time instructor, was, therefore, 242.5 divided by 14.7, or 16.5. This seems to be a heavy average teaching load, but it must be remembered that engineering students carry about 20 credit hours a semester so that each credit hour has less value than a credit hour in a college in which students carry only 16 credit hours. When this factor is given consideration, it is clear that the average credit hour load is not too heavy.

Student Credit Hours per Instructor: Student credit hour registrations, for 1940-1941, were 6,924 the first semester and 5,725 the second semester, or an average of 6,324.5 credit hour registrations a semester. This number, divided by the number of equivalent full-time instructors, 14.7, is 430, which is the average number of student credit hours per equivalent full-time instructor. This seems like a very heavy teaching load, but if adjustment is made for the difference in the value of engineering credits and credits in the usual college, it will be found that the load would be heavy, but within usual recommended standards.

Average Teaching Loads by Departments: The three measures of teaching load that have been applied to the institution as a whole may be applied to each department of the institution. By such means, it can be determined in which departments teaching loads are light and in which departments they are heavy. The average student credit hour load, per equivalent full-time instructor, the average credit hour teaching load on the same basis, and the number of equivalent full-time students per equivalent full-time instructor, by departments, for 1940-1941, may be shown as follows:

Department	Equated Full-time Instructors	Average Semester Student Credit Hours	Average Semester Credit Hours	Measures of Load per One Full-Time Instructor: Student Credit Hours	Credit Hours	Equivalent Full-Time Students
Economics and history	0.4	435.5	11	1,089	27.5	57
Mechanics	0.3	235.5	5.5	785	18.3	41
Mathematics, physics, and aviation	2.6	1,561	42	604	16.2	32
Mining engineering and surveying	1.4	714.5	29	510	20.7	27
Chemistry	2.5	1,013.5	29	405	11.6	21
Geology	2.1	838.5	35	400	16.7	21
Mineral dressing	0.6	207	18.5	390	30.8	21
Metallurgy	1.6	582	30	364	18.9	19
English	1.5	450	15.5	300	10.3	16
Modern languages	0.9	163	20	181	22.2	10
Ceramics	0.5	79	5	158	10.0	8
Physical education	0.3	45	2	150	6.7	8
Total	14.7	6,324.5	242.5			
Average				430	16.5	22.6

The heaviest average teaching loads are shown to be in economics and history and in mechanics. These need cause little concern since less than half the time of an instructor was devoted to either of them. The instructor of economics and history also teaches English. He should devote more time to economics and history and less to English. Possibly the estimate of the division of his time

was not very accurate and he may now devote more time to economics and history than is shown. However, there is nearly enough work for a full-time instructor in economics and history and the loads in English are light. It is recommended that one instructor devote more of his time to teaching economics and history and that the other teachers of English absorb most of his work in English.

Additional help was needed in the subjects of (1) mechanics, (2) mathematics, physics, and aviation, and (3) mining engineering and surveying. It is probable that the decline in enrollment this year has already decreased these loads.

The teaching loads were light in English, modern foreign languages, ceramics, and physical education, on the basis of the number of student credit hours taught per equivalent full-time instructor. They were heavy, though, in modern foreign languages on the basis of the number of credit hours taught. This discrepancy was due to the teaching of many credit hours with few students in the courses. As was previously shown, modern foreign languages accounted for a large proportion of the small classes. The data on teaching load bear out the validity of the recommendation previously made, namely, that, because of the fact that few students study foreign languages, only one should be taught and two foreign languages should be discontinued. The staff of the department of English could teach the one foreign language and the position of instructor of foreign languages could be exchanged for a position of instructor of mathematics and mining engineering to relieve the instructors in those departments.

The work in ceramics has been discontinued this year due to the impossibility of filling a position of instructor of ceramics and mathematics that existed last year.

The amount of work given for credit in physical education is very small. The instructor of men's physical education also teaches mathematics. He should devote more time to mathematics and less to physical education unless more or larger physical education classes are taught, which is elsewhere recommended. The instructor of women's physical education had very little work to do because there were about 16 women in the general curriculum for freshmen. She was employed as a part-time instructor. According to the data submitted, she had ten students the first semester and eight the second, and taught them for one hour of credit each semester. Her salary was only $450 a year and it is probably worth that much to meet a class twice a week for 36 weeks, even if the class is small and the work requires little preparation. However, the cost for each of the 18 credit hours would be $25. In terms of 32 credit hours for an equivalent full-time student, the cost would be $800 for 32 credit hours for a year, which is the number of hours of an equivalent full-time freshman student in the general curriculum. Still the work must be offered if freshmen girls are to be admitted to a general curriculum. This is presented only as supporting evidence that the general curriculum should be discontinued.

Summer Session:

The school of mines holds no summer session. A three-hour course of geologic field mapping for seniors, a four-hour course in plane surveying field work for sophomores, and a two-hour course in mine surveying field work for seniors, are held for three weeks, four weeks, and two weeks, respectively, in the summer. These courses are extensions of regular course work that can be carried on better during summer months than during the regular college session. The compensation of the six members of the faculty who teach these classes is included in their regular salaries. Only 130 students were enrolled in the three summer classes last summer.

Extension Services:

No extension class or correspondence work is given by the school of mines. Some of the faculty members desire to teach extension classes in some of the academic subjects, and a few classes were taught in extension several years ago. It would be inadvisable to begin extension instruction again, when it is being given by the state university. If extension classes are needed in Butte or other cities they should be taught under the auspices of the state university.

Museum:

A combined museum and auditorium occupy the upper floor of a beautiful new library and museum building. When the room is to be used as an auditorium, the museum cases are moved back under the balcony and the seats are moved out to the center of the floor. The museum contains several very valuable geological and mineral collections. The building also contains a room for the housing of models that have been made for use in litigation and have been turned over to the college. These cost several thousands of dollars, in many cases.

Library:

The library is well planned and sufficiently large for a school of less than 300 students. It has a large general reading room with new appropriate furniture, a small reading room with upholstered furniture, seminar rooms, and a map room.

In the library are 12,060 bound volumes, 25,217 unbound items, and 5,930 maps. Of the 12,060 bound volumes, 2,837 are bound magazines and 5,783 are bound government documents. There is very little duplication of volumes in the library.

Last year the following amounts were budgeted for the library:

Books	$465.58
Binding of magazines and documents	487.81
Periodical subscriptions	420.72

Only 95 books were purchased from appropriated funds, but 127 books were received as gifts and 1,857 unbound items were received in exchange with other libraries. The library subscribes to 87 magazines and periodicals and receives 58 others as gifts. It receives government publications, as a U. S. government depository, from 24 government bureaus, offices, commissions, etc., among which are the assay commission, the coast and geodetic survey, the land office, the mint, the reclamation service, and others.

Other information concerning the library and its operation is highly satisfactory.

Bookstore:

One stenographer is employed to operate a central mimeographing office and the bookstore. She devotes only 35 hours a month to operating the bookstore which, at 50 cents an hour, amounts to $17.50 a month for that work. The rest of her time is devoted to mimeographing. Only books and college supplies are sold in the bookstore. Books are sold at only 5 percent above cost. The profit pays for the time of the person in charge of the bookstore and extra help at rush periods. The operation of the bookstore is inexpensive and the students receive the benefit in being able to purchase books below list price.

Student Welfare Enterprises:

Health and Medical Services: Part of the regular fee which each student must pay is designed to cover the cost of health and medical services. The rate is $5 a year, and its payment is compulsory except in the case of graduate students. The total income from health fees in 1940-1941 was $1,560.00, and the cost of medical supplies and doctors' services amounted to $1,543.62. In return for payment of the fee, the student receives one physical examination upon matriculation and necessary medical and surgical care throughout his stay at the college, exclusive of hospitalization, major surgery, and tonsillectomy. An arrangement has been made with the members of the medical association of the county in which the school is located whereby medical services will be furnished to students at discounted rates. Students are expected to choose their own physicians and pay the discounted bills. They may then be reimbursed for their outlays on the basis of receipts signed by the physicians. Arrangements have also been made with each of the hospitals in the city whereby students of the school receive discounts from the regular rates. During 1940-1941, a total of 117 students was given physical examinations upon matriculation and 147 students were treated for minor ailments.

Residence Halls: A main residence hall and a residence for the president of the school were completed in 1935. These buildings were financed by a public works administration grant of $75,000 and by a bond issue payable only from the income received in operating the buildings. The value of these buildings and their contents, on June 30, 1941, as carried in the accounts of the institution, was $322,415.16. On the same date, the bonds outstanding amounted to $210,000. Principal and interest maturities on these bonds average approximately $15,000 a year, based on 4 percent coupons and serial principal payments through 1964. The operations of the fund from which principal and interest payments are made are shown in the following tabulation for the fiscal year 1940-1941:

Balance, June 30, 1940		$ 3,586.56
Income from room and board		33,852.30
Total available during year		$37,438.86
Disbursements:		
Operating expenses	$19,668.10	
Interest on bonds	8,680.00	
Retirement of bonds	7,000.00	35,348.10
Balance, June 30, 1940		$ 2,090.76*

*Subject to an accounting adjustment of $16.14.

The net income from operating the residence halls was insufficient to pay principal and interest on the bonds, the deficiency being approximately $1,500. Unless the annual net income figure can be increased above the amount realized in 1940-1941, either by increasing the number of students residing in the dormitory, by increasing the charge for room and board, or by decreasing operating expenses, the balance in the fund from which the bonds are payable will be exhausted in the next two years and there will be no alternative but to default on the bonds.

The charges for room and board in the dormitory are as follows:

Type of Room	Monthly Charge per Student
Double	$32.50
Single	35.00
Suite	40.00

The two wings of the dormitory are occupied by the members of two student fraternities, and an extra charge of $2.50 a month is made for rooms in these quarters. The president of the school pays $60.00 a month in rent for his residence. Funds received from operating the residence hall are handled locally and are not deposited in the state treasury. With the exception of depreciation, it appears that the residence hall fund is charged with all proper operating expenses.

As it is now being operated, the dormitory has a capacity of 125 beds, although this capacity could be increased by making the quarters a bit more crowded. Last year 110 students occupied dormitory rooms. A dining hall is operated in conjunction with the dormitory. The financial statements submitted by the school are not in sufficient detail to determine whether or not the dining hall is being operated at a profit or a loss. It should be operated at a slight profit. The dormitory is also equipped with small laundry rooms on each floor and with a large laundry in the basement. These are available for student use; otherwise, private laundry services in the city of Butte are used.

The dormitory, including the dining hall, is in charge of a matron. Except for the employment of professional cooks, all of the work performed in operating the dormitory is accomplished by the use of student help.

Student Employment: Other than the work in connection with operating the dormitory, the school is able to provide two additional sources of employment. Approximately 50 students were employed on NYA projects during the last year. Earnings ranged from $5 to $15 a month. Information is not complete as to the usefulness of all of these projects, but many of them undoubtedly are of value in the operation of the school. The school also has working agreements with a local copper mining company in Butte whereby many students obtain employment in the mines. No student is allowed to work more than two shifts a week. This type of employment appears to be properly regulated and furnishes a valuable educational tool as a practical laboratory for students in mining engineering.

Scholarships: Two types of undergraduate scholarships are available at the institution. In 1940-1941, ten "high school honor scholarships" were granted. These were selected upon the nomination of high school principals and the recommendation of the executive secretary of the university of Montana. Eleven "advanced honor scholarships" were granted to students above the grade of freshman. These grants are made automatically to 5 percent of the students above the freshman year, on the basis of a grade index. The total value of all scholarships amounted to $1,145 in fee cancellations.

The school had four fellowships and three assistantships available at the beginning of the present school year. The fellowship stipend amounts to the equivalent of $540 for nine months, and assistants are paid the equivalent of $675 or $750 for the same period. Both types of grants carry with them part-time work assignments, and the students are expected to become candidates for the master's degree.

Four small loan funds are available for helping needy students who have established good records of scholarship and character.

Sponsored Student Activities:

The school of mines participates in intercollegiate athletics in football, basketball, and tennis, under the control of a faculty committee, and as a member of Montana Intercollegiate Conference. It competes with Carroll college, the state normal college, and other small institutions. It does not carry on its athletics program with hired athletes and very little attention is paid to athletics. The income and expenditures for athletics, in 1940-1941, was as follows:

	Income
Local contests	$ 266.01
Athletic fees	2,850.00
Guarantees	450.00
Total	$ 3,566.01

	Expenditures
Time of coach	$ 1,633.31
Associated students of the school of mines	3,902.69
Total	$ 5,536.00

It appears that the income for athletics is somewhat less than the expenditures.

The intramural sports program consists of basketball, tennis handball, boxing, ping pong, hockey, and other sports. About one third of the students engage in intramural sports. The program is carried on by NYA students who plan tournaments, officiate at games, compile statistics, and care for equipment, under the direction of the athletic director. Intercollegiate sports are valuable training for college students. The full time of the instructor of physical education for men should be given to instruction in physical education and intramural sports and as much coaching of athletics as he now does. Other provision should be made for instruction of the mathematics class he now teaches.

Dramatics is a minor activity in the school of mines, usually confined to one play a year. The students of the school participate in the oratorical and debating contests of the Montana intercollegiate oratorical association and debate league. About 15 or 20 students participate each year. About 25 to 40 students are members of the college glee club. About 12 to 16 students participate in a self-directed orchestra.

The two fraternities are under the control of an inter-fraternity council, consisting of three faculty members. Social functions are controlled by the faculty.

A college magazine is published five times a year. About 15 students participate and others sometimes make contributions. The college annual has not been published for several years because of lack of funds.

Assemblies are held irregularly for announcements, entertainments, lectures, and the like.

The student government body is functioning satisfactorily.

Physical Plant:

Value: The estimated value of the physical plant of the school of mines, as reported from the books of the institution in November 1941, is shown in the following tabulation:

Type of Asset	Inventory Value
Land	$ 41,932.35
Buildings	1,146,395.68
Equipment	296,569.44
Total	$ 1,484,897.47

The campus comprises 11.5 acres on which eight buildings are situated. Only three of these buildings serve chiefly for classroom instructional purposes. The other five are the library-museum, the dormitory, the president's residence, the heating plant, and the gymnasium.

Recent Additions to the Physical Plant: The physical plant may be divided into three groups according to time of construction. The first group comprises the main hall (a classroom building) and the heating plant, which were completed in 1897 and 1908, respectively. The second group comprises the engineering hall, the metallurgy building, and the gymnasium, completed in 1923, 1923, and 1925, respectively. The third group consists of the president's residence and the dormitory, which were completed in 1935, and the library-museum building, completed in 1940. Bond issues are outstanding on all of the last group. As pointed out earlier in this report, the residence hall bonds are payable from the income received in operating the buildings and the margin for payment is very thin. The library-museum bonds, on the other hand, are payable from library fees and from the land grant interest and income. Revenues to retire these bonds are entirely adequate, but the school will have less money available from the interest and income fund for ordinary operating expenses until the bonds are finally retired.

Adequacy of the Physical Plant: The physical plant appears to be adequate for the needs of the school, especially in view of the decreased enrollment. The classrooms leave something to be desired in the way of adequate lighting, and laboratory arrangements could have been made to better advantage. Office space seems to be unusually large in many cases. The advice of those who have made special study of educational building design should be obtained in planning any new construction. This is important, even from a relatively short range point of view, since it is evident that the oldest building will have to be replaced before many years have elapsed. It should also be noted that this building, three stories in height, is the most hazardous fire risk on the campus and is not provided with a fire escape. It was reported that a rope is available on the third floor of this building for use in case of fire, but it should be evident that combustible material makes a poor fire escape, even for the small number of persons using this part of the building. The dormitory does not have sufficient room for all students coming from without a 10-mile radius from the school, but there should be sufficient facilities available within the city of Butte to care for any excess. The assignment of two wings of the dormitory building to social fraternity groups is open to question as a matter of policy, but it is reported that the arrangement has had no noticeable, deleterious effects on student morale.

The institution has some equipment that is almost useless, such as an expensive air compressor that is used about one week a year for class instruction. It lacks other essential equipment, such as a sufficient number of microscopes for the students enrolled in courses in optical mineralogy and petrography and additional binocular microscopes for use in geology. There is much waste of time in waiting for the one binocular microscope now available.

Need for Repairs: Lack of sufficient funds has prevented proper repairs being made, and the older buildings, in particular, are in urgent need of repair. The plumbing in the chemistry laboratories of the metallurgy building is badly corroded and should be replaced with sinks and drain pipes made of acid-resisting metal. Leaks have been common in the roof of the gymnasium. It is reported that expenditures made for repairs and alterations during the last 13 years have totalled only about one percent of the value of the plant. It is a short-sighted policy to restrict funds for repairs which might be made at slight relative costs and which would save capital outlays of many times the amounts spent for repairs. It is recommended, therefore, as a means of saving money, that funds be made available to the institution for adequate repairs to the physical plant.

Operation and Maintenance: The operation and maintenance of the physical plant is the responsibility of the campus foreman, who reports directly to the president of the school. With a few exceptions, operation and maintenance practices have been adequate and reasonably efficient. As an example of the exceptions, the hardwood floor in the engineering building has been improperly cleaned with water and is warped and cracked in many places. Floors should be

properly preserved so that water will not be needed to keep them clean. Windows were generally dirty, indicating a need for more frequent cleaning.

The institution is particularly fortunate in having adequate tunnels to conduct the heating and wiring system. These tunnels are well insulated to conserve heating costs and are also large enough to be used for passageways between buildings, thus providing a convenient arrangement during inclement weather.

Because of the labor situation in Butte, the most industrialized center in the state, the cost of operation and maintenance of the physical plant is relatively higher for the school of mines than is the case for other schools in the state. This is also true for repair work. For example, the school of mines cannot use student help to best advantage, nor can it use its own salaried employes for certain types of work without violating union rules and causing unpleasant situations in general. Furthermore, the wage scale for plant employes is at a level which places the school in the embarrassing position of paying higher salaries to janitors than to some of its instructors holding the master's degree. Such a situation evidently calls for readjustment.

Finances:

Means of Financing: The school of mines is financed from three main sources:

(1) Appropriations from the university millage fund (the university millage fund is derived from a property tax levy of three and one-half mills; the proceeds of this levy are distributed by appropriations of the legislative assembly to the several state institutions of higher education).

(2) Appropriations from the general fund (fees paid by the students are deposited in the state treasury to the credit of the general fund, and this appropriation is to make the estimated amount to be received from the fees available to the school for expenditure).

(3) Interest and income from the federal land grant to the school of mines (this is expended without the appropriation of specific amounts).

The following tabulation shows the amounts available for the operation of the school of mines during the last two fiscal years and the estimated amounts for the current biennium. The figures do not include amounts received from operation of the dormitory, from a federal grant for new construction, from student activity funds, and from various other minor local funds.

Means of Financing	Actual Amounts 1939-1940	Actual Amounts 1940-1941	Estimated Amounts 1941-1942	Estimated Amounts 1942-1943
Millage fund appropriation for school of mines (net)	$ 57,875.00	$ 57,994.00	$70,200.00	$70,200.00
Millage fund appropriation for bureau of mines and geology	10,000.00	10,000.00	9,200.00	9,200.00
General fund appropriation	17,000.00*	17,000.00*	17,000.00	17,000.00
Land grant interest and income	33,206.46	39,745.59	30,000.00	30,000.00
Totals	$118,081.46	$124,739.59	$126,400.00	$126,400.00

*Revolving fund appropriations. These represent student fees which are now deposited in the state general fund.

For the current biennium, appropriations from the university millage fund are approximately $12,000 higher each year than those of the last biennium. This was made possible by an increase in the millage rate and by better collection prospects. The millage rate increase was made possible by the passage of a referendum measure in 1940 authorizing a property tax rate of three and one-half mills a year for the next ten years for the support of the several institutions of higher education. The maximum rate formerly in effect was three mills. It is understood that the increase of one-half mill in the maximum levy was intended mainly to provide a means of making partial restorations of salaries to levels existing before depression decreases were made. The appropriations from the university millage fund were allocated among the various state institutions on the basis of budget requests, taking per capita student costs into account. In estimating the needs for the current biennium, per capita student costs were based on last year's enrollment. As pointed out earlier in this report, the enrollment of the school of mines for the current year has dropped approximately eleven percent under the enrollment for last year. Thus, it would seem that the school should have ample funds for operations and perhaps would be able to show unexpended funds were it not for the possibility that interest and income from the federal land grant will decline substantially. As shown in the tabulation, this figure is estimated at $30,000 for each year of the current biennium. During the last biennium, somewhat larger amounts were collected, but the figures for both years include premiums from the sale of investments under unusual circumstances. The net result, ther points to the likelihood that the school will have only slightly larger amounts available for expenditure during the current biennium than during the past two years.

The system of financing, outlined above, actually results in a total appropriation of an indeterminate amount, since the interest and income received from the land grant is available for expenditure by the school, regardless of the estimated amount taken into account by the legislative assembly in making appropriations from oth. funds. These latter appropriations lapse at the end of the biennium,

while any unexpended balance of the proceeds from the land grant is available for expenditure by the school during the ensuing biennium. Toward the end of the biennium, therefore, the school officials endeavor to charge expenditure vouchers against the specific appropriations, while other financial officials of the state government insist on charging such vouchers to the interest and income fund. This is an unhealthy condition from both points of view and can only be remedied by legislation, or possibly by a constitutional amendment, authorizing the legislative assembly to make specific appropriations from the interest and income fund. The problems growing out of the earmarking of funds for education and other departments of the state government will be discussed in another report.

Expenditures: The expenditures of the school of mines for the last two fiscal years, as shown by the reports of the business manager, are summarized in the following tabulation:

Purpose of Expenditure	Amount Expended 1939-1940	1940-1941
Operating expenses:		
Administration	$ 12,872.83	$ 12,829.13
Educational system	69,488.60	70,572.20
Physical plant	23,317.26	25,091.71
Total operating expenses	$105,678.69	$108,493.04
Capital outlays (ordinary)	7,303.48	4,259.96
Capital outlays (extraordinary)	100,832.51	-
Repairs and replacements	3,074.33	2,797.86
Principal and interest on bonds	1,922.50	6,682.50
Total expenditures*	$218,811.51	$122,233.36

*Exclusive of local funds and trust funds.

Unit Costs:

Total expenditures for the school of mines, for administration, the educational system, and the physical plant, in 1940-1941, amounted to $115,550.86. This does not include expenditures for the self-supporting enterprises of the institution nor for debt service. Expenditures for operation alone amounted to $108,493.04.

Total enrollment, in 1940-1941, was 353 students. Equivalent full-time enrollment, according to the method previously used for computing it, was 333 students.

Using these two sets of figures, unit costs may be computed as follows:

Total cost per student enrolled	$327.34
Operation cost per student enrolled	307.35
Total cost per equivalent full-time student	347.00
Operation cost per equivalent full-time student	325.80

The last figure, $325.80, is probably the most significant unit cost figure. It has been compiled with the omission of capital outlays and expenditures for repairs and replacements. Also it uses an equivalent full-time student basis as the divisor, which counts a student only for that portion of the school year for which he was enrolled.

Expenditures for operation that are strictly for the departments, omitting all administration expense, plant operation expense, library expense, research expense, and the like, may be divided by the number of equivalent full-time students in the departments to determine the cost per equivalent full-time student in the several departments. The results are as follows:

Department	Number of Equivalent Full-Time Students	Expenditure for Operation	Cost per Equivalent Full-Time Student
Physics and mathematics	82.2	$7,355.62	$ 89.48
English, foreign languages, economics, and history	55.2	7,353.44	133.21
Mining engineering	50.0	8,171.11	163.42
Chemistry	53.4	9,738.16	182.36
Geology	44.1	8,182.34	185.54
Metallurgy	34.8	8,032.39	230.82
Mineral dressing	10.9	4,240.87	389.07
Physical education	2.4	2,490.31	1,037.63

The expenditures for operation of the several departments are those charged against the departments. These will be true figures only if the salaries of instructors who teach in more than one department are properly divided among the departments in which they teach. If this has been done the cost figures will be significant.

In general, the figures on unit costs by departments support the comments made on the basis of data presented on class size and on teaching loads in the several departments. Attention was called to the need for additional instructors for mathematics and attention was called to the light teaching load and high cost of women's physical education. The high cost shown here, however, seems to include the cost of salaries for athletics for which credit is not given, and is, thus, a spurious figure for the cost of teaching the credit courses in physical education. The portion of time given by the instructor of physical education to coaching athletics should be charged to athletics as a student enterprise and not to physical education.

The cost per student for instruction in mineral dressing is high, mainly because the work is limited to senior and graduate students and classes must, necessarily, be small.

Value and Cost of the Services:

The value of instruction in mining, mineral dressing, metallurgy, and geology, and the value of research in these fields, has been emphasized throughout this report. The mineral resources of the state are important; many of the people of the state are engaged in mining occupations; mining property represents much of the wealth of the state; and a considerable proportion of the taxes of the state are paid by mining interests. The state cannot afford to fail adequately to support instruction and research in mining, geology, and related subjects. However, there need be no lavish expenditures in these fields of study and research and every dollar should be expended as a productive investment for the people of the state.

The institution is ideally located in a region that produces copper, silver, zinc, and gold. It provides excellent natural laboratory facilities and provides possibilities for young men of the school to earn some money, and at the same time gain background for the work they expect to follow, on days and evenings when they do not need to study.

Unit costs on several bases have been shown elsewhere. Total expenditures of the institution have been shown under another heading.

Summary of Recommendations:

On the basis of the facts and conclusions presented in this report of a study of Montana school of mines, it is recommended:

Recommendations Not Requiring Legislative Action:

(1) That the general curriculum of the school of mines, offered to freshmen who are not interested in the technical curricula of the institution, be discontinued for purposes of economy and on the grounds that the work of a school of mines is unsuitable for general study and that possible increases in the number of general students may be injurious to mining education.

(2) That related courses of one or two credit hours be combined with other such courses, in order that there may result closer relationships among units in allied subject matter fields and in order to reduce the number of different courses required of students.

(3) That the few exceedingly large classes be divided into sections.

(4) That, as a means of more nearly equalizing teaching loads, the instructor of economics and history devote most of his time to the teaching of these subjects and that the work in English now taught by this instructor be absorbed by the teachers of English.

(5) That, because of a lack of demand for foreign languages, only one of the three foreign languages now being offered be offered in the future and the other two be discontinued, and that the foreign language retained be taught by the instructors of English.

(6) That the position of instructor of foreign languages be discontinued and that a position of instructor of mathematics and mining engineering be added.

(7) That the full time of one instructor be devoted to the teaching of physical education and intramural sports, but that he devote no more time to the coaching of athletics than at present, and that the mathematics classes he teaches be taught by other instructors of the mathematics department.

(8) That professional titles be not given to non-teaching employes, since they are not descriptive of the work they perform.

(9) That the title of associate professor be used for some of the positions now designated as professor, when there are changes in staff, and that there be fewer full professorships.

(10) That, as a means of improving the work of the institution, the few poorly qualified members of the instruction staff be replaced by instructors with more specialized training and specialized experience in their teaching and research specialty.

(11) That, as a means of increasing the research service in the state, the authorities of the school of mines consult persons interested in mining to determine the mining and geology problems that need solution, and that they solicit private sources to secure more funds for mining research.

(12) That more copies of the publications of the bureau of mines and geology, for which there is likely to be much demand, be published, in view of the fact that the 1,000 copies of each study now published are inadequate to meet demands, in most cases, and that the principal expense of publication is met in the cutting of the stencils.

(13) That the price of research bulletins be increased above 15 cents, to about 50 cents or $1.00 each, with the purpose of conserving the bulletins and of producing more income from their sale.

(14) That one, or a combination of several, of the following alternatives be used to enable the institution to meet the obligations that will come due on the residence hall: (1) increase the number of students residing in the residence hall, if possible, (2) increase the charges made for room and board, or (3) decrease operating expenses.

(15) That the main hall be equipped with at least one fire escape.

(16) That, as a means of economy of the time of instructors and students, there be purchased additional microscopes for classes in optical mineralogy and petrography and additional binocular microscopes for classes in geology.

(17) That the portion of time devoted by the instructor to the coaching of athletics be charged to the athletics account instead of being charged to the physical education account as at present.

(18) That, as a means of protecting the ceilings and walls of the metallurgy building, the chemical laboratories be equipped with acid resisting sinks and drain pipes in place of the corroded sinks and pipes now in use.

(19) That the flat part of the gymnasium roof be repaired.

(20) That the hardwood floors of the engineering building be properly cleaned and preserved to make unnecessary their being scrubbed, with the accompanying deleterious effects of water upon them; and that windows be washed more frequently.

Recommendations Requiring Legislative Action:

(21) That Montana school of mines be included in the enumeration of institutions of higher education under the "control and supervision" of the state board of education, which enumeration is made in section 841 of the Revised Codes of Montana for 1935.

(22) That the state do not, at present, establish curricula in petroleum geology, petroleum engineering, coal mining, and ceramics, in the school of mines, but that a small appropriation, such as $3,000 a year, be made to pay the non-residence fees of Montana students to study in these curricula in the universities of other states.

STATE OF MONTANA

GOVERNOR'S COMMITTEE ON REORGANIZATION

AND ECONOMY

NORTHERN MONTANA COLLEGE

(Report No. 41)

November 24, 1941

Prepared by

Griffenhagen & Associates

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REPORT ON

NORTHERN MONTANA COLLEGE

Introduction:

In 1913 the legislative assembly of Montana established the Northern Montana agricultural and manual training school and, at the same place, an agricultural experiment substation. The act authorized the purchase from the federal government, by the state, of 2,000 acres of land in the Fort Assiniboine reservation which included the site and deteriorated buildings of the abandoned fort. The control of the institution was vested in the state board of education and a local executive board.

The school, as established by the legislative assembly in 1913, was not placed in operation until 1929, when the legislative assembly made an appropriation for its support.

The institution was opened in the high school building at Havre. It was the sixth and last of the units of the university of Montana to be placed in operation.

In 1932, some of the work of the institution was moved to a small building, remodeled from an old pumping station, already on ground that had been secured for the campus. In 1933, another building was constructed from salvaged materials, and more of the college was moved to the campus. The administrative offices of the college are still located in the Havre high school building and some of the work of the institution is done in the basement of a church near that building.

The name of the institution was changed in 1935 to Northern Montana College.

The institution is of junior college grade. Two years ago it began offering a third year of college study in the fields of education and medical secretaryship, but had no students enrolled in the third year of study last year.

The excellent relationships between this college and the community in which it is located are worthy of note. The community has cooperated with the college in helping it to start and to improve its work. People of the community have donated materials and labor for the construction of buildings and for equipping them. The college contributes nothing to the school system or to teachers'

salaries for the privilege of carrying on practice teaching in the public schools. The college also attempts to serve the community, though its clientele is by no means local. With greater state support, there will be some danger that the community may come to feel that the institution may no longer need its help. The history of some colleges in the United States has been that they received community support so long as they were struggling institutions but when they became large and appropriations increased, many members of the community looked upon the college as an agency for community exploitation.

Extent of Services Rendered:

Location: Northern Montana College is located at Havre, a city of about 7,000 population, in northern Montana. There are no competing institutions near Northern Montana College, but the region where the institution is located is sparsely populated so that the institution has little possibility for further growth of enrollment in the near future.

Territory Served: Partly because of sparse population in the immediate region in which the college is located, Northern Montana College has relatively few local students. For the college year, 1940-1941, the distances of the homes of students from Havre was as follows:

Distances of Homes of Students from Havre	Enrolled College Students			
	Regular Session		Summer Session	
	Number	Percent	Number	Percent
Within 10 miles	116	22.9	24	24.5
10 to 50 miles	59	11.7	13	13.3
50 to 100 miles	59	11.7	13	13.3
More than 100 miles	272	53.7	48	48.9
Total	506	100.0	98	100.0

Only 34.6 percent of the regular session students live within a radius of 50 miles of the institution, while 53.7 percent live more than 100 miles distant. This is most unusual for a general college and is rare even for higher educational institutions of any type.

Of the 506 regular session students, in 1940-1941, twenty-four were part-time students, but they were distributed over broad areas as were the regular students. Elsewhere, the number of students in 1940-1941 was stated to be 507.

Of the 506 regular session students, 10 came from other states, North Dakota and Washington each furnishing three of the ten out-of-state students. Only three of the 98 summer session students were from other states.

Growth and Size of the Institution: The institution is still small, but it has had considerable growth in the number of students enrolled in the last ten years. Enrollment, for various years of the last ten years, has been as follows:

	Regular Session
1930-1931	188
1933-1934	381
1936-1937	432
1939-1940	472
1940-1941	507
1941, October 23	402

The institution made steady growth until the present college year. A few additional students may register for the second and third quarters, but it is not likely that there will be more than 402 students in attendance in either of these quarters. However, gross enrollment figures have been given for previous years, and any additional entering students will increase the total enrollment for the current college year. It appears that the loss of enrollment for this year probably will reach 15 or 16 percent of the enrollment as of last year. The decrease of enrollment is common among colleges of this and other states this year though some of them have not had such a large decline of enrollment as has this institution.

The smaller number of students in the institution should be kept in mind in consideration of data presented for the institution as of 1940-1941, the last completed college year.

In the summer session, 98 students were enrolled in 1940. In addition, 18 students were enrolled in correspondence courses.

Functions:

The law provides that

> "the northern Montana agricultural and manual training school ... has for its object instruction and education in the English language, literature, and mathematics, mechanic arts, agricultural chemistry, animal and vegetable anatomy and physiology, and veterinary art, entomology, geology, and such other natural sciences as may be prescribed by the state board of education, political, rural and household economy, agriculture, horticulture, moral philosophy, history, bookkeeping, and especially the application of science and the mechanic arts to practical agriculture in the field, and irrigation and use of water for agricultural purposes; also all that relates to an efficient, modern manual training school."

The law provides that this agricultural and manual training school was to cover more fields than are included in the curricula of many universities. Not only were subjects specified, but in some instances, divisions of subjects were specified, such as "animal and vegetable anatomy and physiology." The term "veterinary art" is not clear. On the whole, the statement of the object of the institution is very poor.

The institution has an extremely broad curriculum, for the first two years of college, but it does not nearly fulfill the objectives of the law concerning what shall be included in its curriculum.

Objectives of the institution are stated in the college catalog as follows:

> "The two-year college program is provided to meet the ever-increasing demand for thorough pre-professional preparation. . . . His (the student's) choice of a profession is deferred in many cases for one or two years, during which time he finds opportunity . . . to make a wise choice of a profession before he reaches the point at which definite specialization must begin."

The institution does not and should not fulfill the requirements of the law regarding its purposes. It is recommended that the law stating the purposes of the institution be repealed and that the purposes be left for determination by the state board of education.

Accreditation:

The institution is accredited for three years of college work by the northwest association of secondary and higher schools, though it had no students in the third year of college as of last year.

General Control:

The institution is under the control and supervision of the state board of education as one of the six units of the University of Montana.

Admission of Students:

The institution sends catalogs and other information to high school principals and others interested in student guidance and sends information concerning the college to students upon request as a means of calling attention of prospective students to the college.

Requirements for admission are that applicants shall be at least 16 years of age, must present evidence of good moral character, must have completed a four-year high school curriculum or its equivalent, with the completion of at least 15 units of work, and must have completed the following secondary school courses:

English, 3 units
American history, 1 unit
Two units from each of three of the following groups:
Mathematics (6 specified subjects)
History and social sciences (12 specified subjects)
Laboratory sciences (12 specified subjects)
Foreign languages (Number of options not specified)

Psychological tests are given to freshmen but the results are not used in determining who will be admitted to the college.

Students may be admitted without meeting the subject requirements but, to be admitted, such students must either be examined in the subjects in which they are deficient or must earn eight college credits in each deficient subject in addition to college work in the subject required for a degree. However, subjects taken to make up high school deficiencies for entrance may be counted toward the degree.

A few other possibilities are open for admission to the college, such as by certificate, by examination, on condition, to special standing, and by transfer from another college or university. All of these provisions appear to be satisfactory. Even though about 5 percent of the students enter the college with deficiencies, all are high school graduates.

The registrar of the college is responsible for final decision as to qualifications of student applicants for admission.

Last year four students were eliminated from the freshman class, at the close of the first quarter, because of low grades, and nine students voluntarily withdrew.

Classification of Students:

Students enrolled in the regular and summer sessions of Northern Montana College, in 1940-1941, were classified as follows:

	Regular Session		Summer Session	
	Number	Percent	Number	Percent
Special	25	4.9	11	14.3
Freshman	302	59.6	15	19.5
Sophomore	180	35.5	51	66.2
Junior	0	0.0	0	0.0
Total	507	100.0	77	100.0

It will be noted that in the regular session, nearly 60 percent of the students were freshmen and only a few more than 35 percent were sophomores. This indicates very poor holding power of the college for its second college year, since most transfers to other colleges would occur at the endof the second year. It will be noted that no students were enrolled in the junior year of college last year. If a few students should enroll in the junior class, it would be costly instruction because the class would necessarily be small. It is recommended that the third year offering be discontinued and that the offerings of the institution be limited to two-year curricula.

Organization and Staff:

Outline of Organization: The internal organization of Northern Montana College and the positions comprising the staff of the institution may be shown as follows:

Title of Position	Number of Positions	Months Employed	Annual Salary
President	1	12	$5,500
Secretary to the president	1	12	1,560
Assistant secretary	1	12	1,080
Professor	2	9	2,700
Associate professor	1	9	2,600
Associate professor	2	9	2,400
Associate professor and director of student teaching	1	9	2,400
Associate professor	1	9	2,000
Assistant professor	1	9	2,500
Assistant professor	1	9	2,250
Assistant professor and director of athletics	1	9	2,250
Assistant professor	1	9	2,200
Assistant professor	1	9	2,000
Assistant professor	1	9	1,900
Assistant professor	1	9	1,850
Assistant professor	1	9	1,750
Instructor	1	9	2,000
Instructor	1	9	1,900
Instructor	1	9	1,900
Student assistant (part time)	2	-	-
Librarian (also instructor)	1	12	2,000
Student assistant (part time)	6	-	-
Dean of women (also instructor)	1	9	2,800 M

M - Full maintenance

Title of Position	Number of Positions	Months Employed	Annual Salary
Director of residence hall and instructor	1	12	$1,450 M
Cook	1	-	-
Student kitchen and dining room assistants (part time)	21	-	-
Business manager and registrar	1	12	2,700
Secretary to the registrar	1	12	900
Campus foreman	1	12	1,920
Student janitor (part time)	4	-	-

M - Full maintenance

There is need for very little change in the organization of the staff. The institution is small and there needs to be little overhead organization. It appears that too many employes report directly to the president of the institution. It is suggested that the director of the residence hall be made responsible directly to the dean of women and that the campus foreman be made responsible directly to the business manager. Position description cards of instructors, certified as being correct by the president, showed that there are no heads of instruction departments. There are many advantages in avoiding the division of the instruction staff into departments, with a head of each department, so long as the staff is small. This is especially desirable since the instructors, as a rule, teach several subject fields and a division into departments would but cause confusion. However, this form of organization gives the president a pretty heavy load.

Rank of Instruction Positions: The number and percent of instruction positions having the various ranks may be shown as follows:

Rank	Number	Percent
Professor	2	9.5
Associate professor	5	23.8
Assistant professor	8	38.1
Instructor	6	28.6
Total	21	100.0

It is usually considered to be desirable for the number in the two highest ranks to be equal to the number in the two lowest ranks. However, this may not be considered to be necessary in an institution of junior college grade and there are many junior colleges in which no professorial ranks are given and all instruction positions are designated as "instructor."

Qualifications of Instruction Staff:

The average age of instructors is 40.7 years. The range is from 31 to 57 years.

The educational attainments of the members of the staff who teach classes are as follows:

Highest Degree	Number	Percent
Doctors	8	38.1
Masters	12	57.1
Bachelors	1	4.8
No degree	0	0.0
Total	21	100.0

From the standpoint of formal training, and also from the standpoint of higher degrees received from study in their special fields, the staff of Northern Montana College has excellent qualifications. All but one member hold degrees representing graduate study. The member who does not hold such a degree teaches very little and is employed mainly for non-teaching work. Of those who are employed full time for teaching, 45.5 percent hold the doctor's degree and 55.5 percent hold the master's degree as the highest earned degree.

The average experience of the members of the faculty has been as follows:

	Average Years	Average Percent
Teacher in this college	4.4	28.2
Teacher in other colleges	5.0	32.1
Non-college educational work	5.2	33.3
Non-educational work	1.0	6.4
Total	15.6	100.0

From the standpoint of breadth of experience in other colleges and in other educational work than college teaching, the staff is particularly well qualified. All but four members have taught in other colleges, and all but six have taught in lower schools or have had other non-college educational experience.

The faculty ranks high in the number of scholarship honors received, such as fellowships and scholarships and election to membership in the scholarship fraternities of Phi Beta Kappa and Sigma Xi. However, the members have not received significant honors for professional accomplishments in any great numbers. Nine members of the faculty have made contributions to their fields of learning, but in some cases they were not contributions representing research and in some cases the contributions have been limited to only one or two significant studies.

On the whole, the staff is especially well qualified by training and experience to give instruction in an institution of junior college grade. They are better qualified, in fact, than is the staff of the usual four-year college.

Scope of Educational Activities:

Credit Hours Offered and Taught: The number of quarter credit hours offered in 1940-1941, the number of quarter credit hours actually taught in 1940-1941, and the number of quarter credit hours offered in 1941-1942, by departments, may be shown as follows:

Department	Listed in Catalog for 1940-41	Taught 1940-41	Listed in Catalog for 1941-42
French	30	25	30
German	35	30	35
Spanish	20	0	20
English	67*	59*	70
Library science	2	2	2
Social studies	59*	42*	59
Biology	42	42	52
Chemistry	45	40	45
Mathematics	50*	45*	50
Physics	20	20	20
Psychology	20*	15*	20
Education	32*	27*	32
Art	8	8	14
Music	15	12	24
Business and secretarial science	115*	96*	134
Drawing	29	23	29
Engineering	20	20	20
Physical education for men	23*	18*	23
Physical education for women	8*	8*	8
Orientation	3	3	3
	643	535	688
Deduct duplicates listed (see footnote below)	35	30	35
Corrected Totals	608	505	653

*Subjects listed under two departments to assist student in arranging programs. These credits not deducted from totals in either case.

Only 83.1 percent of the courses listed last year were actually taught. In spite of this fact, the offerings for 1941-1942 were increased 7.4 percent above the offerings of 1940-1941. There was no warrant for such an increase in the number of courses offered when 16.9 percent of those already offered were not taught. In spite of a claim that no additional courses are required for juniors, the catalog lists 5 courses, with a total of 29 credit hours, that are "open to juniors only."

The number of credit hours offered per 100 students enrolled for the regular session of last year was 608 divided by 5.07, or 119.9. This is an exceedingly large ratio for junior college years, even though these are given in terms of quarter hours. The number of credit hours offered could be greatly reduced both in the interests of the quality of work given and of economy of cost.

Padding of the college catalog was 16.9 percent last year and, with the smaller enrollment and the increase of offerings it will doubtless be greater this year. The explanation for the amount of padding is as follows:

Subjects are included that are being offered by correspondence but are not being taught in class.

Subjects are offered which may be used as alternates, substituting for two or more other subjects.

Subjects are offered which have been requested or have been offered previously or have been made available for students but which were not taught because the demand at that time did not justify the cost of offering the subject.

Subjects are sometimes offered simultaneously with other laboratory subjects.

None of these explanations are satisfactory. There is no reason for more than one correspondence center in the state, as will be shown later. If subjects are offered as alternates to two or more other subjects, then the two or more other subjects should be discontinued and the alternates, only, should be offered. Subjects should not be offered at the request of one or two students unless there is sufficient demand to justify their being taught. Subjects for which there is no demand should not be offered just because they can be given simultaneously with other laboratory subjects. Such procedure is clear padding of a college catalog.

Another explanation that might have been given, but was not, is that in a few cases subjects are given in alternate years. This is not padding of a catalog if it is clearly stated in which year a course will be taught. Such has not been done in the catalog of this college, and all of the courses were scheduled to be given last year.

Curricula: The college lists, under the head "Curricula," 25 curricula for which it gives the first two years of training. The statement is made that "The typical professions listed under each section are intended to be representative rather than inclusive." On this basis, still other curricula, for which training or pre-training is offered, might have been listed. The list is given on the following page.

Arts and sciences
Chemistry
Social sciences
Business administration
Secretarial science
Agriculture
Forestry
Civil engineering
Mechanical engineering
Industrial engineering
Electrical engineering
Chemical engineering
Home economics
Pre-aviation
Journalism
Law
Library science
Elementary education (2-year program)
Three-year courses in education
Secondary education
Arts and nursing
Medicine
Medical secretaryship
Medical technology
Dentistry

The courses in each of these curricula have not been outlined in the catalog. Most of them would not require specialized training in the first two years. There probably would be little difference, for example, in the courses taken the first two years by students who intend to transfer to a journalism curriculum or a medicine curriculum in a university. This is because specialization usually begins after the sophomore year of college. In other words, in most of the suggested curricula, the first two years of college are only the end of secondary education and a major is started with the third year of college. Both journalism and medicine would require only an arts and science curriculum in the first two years.

On the other hand, specialized study is required in the suggested engineering, business, and education curricula in the first two years. In such curricula there may be unjustifiable duplication of the work given by other colleges because specialized study begins in the freshman and sophomore years.

Size of Classes:

Class Enrollment: While the institution conducts its regular college session in three quarters, data were furnished by the officers of the institution for class enrollments in terms of semesters. Whether the data were furnished for the first two quarters under the designation of first and second semesters or the enrollments for the three quarters were computed in terms of two

semesters, was not explained on the data sheet, but in either case the data will indicate the relative number of small, satisfactory, and large classes in the institution.

The number of classes of various enrollment sizes, in 1940-1941, was as follows:

Class Enrollment (Students)	Number of Classes of Stated Enrollment			
	First Semester	Second Semester	Total Number	Total Percent
1 - 4	0	3	3	1.9
5 - 9	8	12	20	12.8
10 - 14	12	11	23	14.8
15 - 49	49	47	96	61.5
50 - 74	7	7	14	9.0
Total	76	80	156	100.0

It will be noted that 29.5 percent of all classes had fewer than 15 students enrolled and that 14.7 percent had fewer than 10 students enrolled. Few, if any, classes of freshmen and sophomores should have under 15 students. Most of the subjects of small enrollment should be discontinued or offered only in alternate years so as to increase their size.

Only 9 percent of the classes were above the satisfactory size of 15 to 49 students.

A comparison of the average size of classes by college years and semesters, for 1940-1941, may be shown as follows:

Classification	Average Size of Classes	
	First Semester	Second Semester
Freshman	27	27
Sophomore	26	21

In an institution of 507 students, all in the freshman and sophomore years, where wide variation of work is not required, the average size of classes could be made larger by reducing the number of classes having fewer than 10 students.

Subjects of Small Enrollment: The number of classes of small enrollment in each subject for the first and second semesters was as follows:

	Number of Classes of Small Enrollment			
	From 1-4 Students		From 5-9 Students	
	First Semester	Second Semester	First Semester	Second Semester
French	-	-	-	1
German	-	-	1	1
English	-	-	-	1
Biology	-	-	-	1
Physics	-	-	1	-

(Cont'd on next page)

(Table cont'd)

	Number of Classes of Small Enrollment			
	From 1-4 Students		From 5-9 Students	
	First Semester	Second Semester	First Semester	Second Semester
Library science	-	-	1	-
Physical education	-	1	2	2
Music	-	-	-	1
Drawing	-	1	-	3
Engineering	-	1	-	-
Business and secretarial science	-	-	3	1

Most of the classes of very small enrollment were classes in highly specialized subjects. Among these were such subjects as the following:

Legal shorthand
Technical drawing
Elementary machine design
Lettering
Engineering drawing
Highway engineering
Library economy
Advanced French
German novel
Readings in Schiller or Goethe
Theory and coaching of football
Advanced theory and coaching of basketball.

Highly specialized subjects for which there is so little demand that classes have fewer than 10 students should generally be discontinued.

There were no classes of more than 75 students enrolled. Hence, there is no need for discussion of large classes.

Work Load of Instruction Staff:

Hours of Service per Week: Instructors made estimates of the hours per week they work, on an analytic work-sheet showing the number of hours devoted to each instruction duty and each administrative and supervisory duty. The results show that the instructors, according to their estimates, work from 41 to 80 hours a week. The averages are as follows:

	Hours per Week
All instruction duties	50.0
All administrative and supervisory duties	8.2
Average total hours per week	58.2

The average work load is very heavy. It is believed that better curriculum organization would greatly reduce these requirements. The curriculum covers far too many subjects for a small college. For this reason the members of the faculty are overworked. The number of subjects and, likewise, classes should be reduced.

Measures of Teaching Load: A better measure of the work of teachers, than the composite of their estimates of the number of hours devoted to many separate duties, is the teaching load which includes the proportion of time teachers devote to instruction. Three possible measures of teaching load of college instructors are the number of equivalent full-time students per equivalent full-time instructor, the number of credit hours per equivalent full-time instructor, and the number of student credit hours taught per equivalent full-time instructor. The teaching loads on these bases will be presented in the paragraphs that follow.

Students per Instructor: The number of equivalent full-time students in the institution is determined by dividing the total number of credit hours registered by students, for 1940-1941, by the number of credit hours the average student is expected to complete in a year.

The total number of semester credit hours reported for 1940-1941 was 14,360. Since the institution operates on a quarter basis, this is either a report for two quarters, or equivalent figures in terms of semesters. However, in either case, the average student credit teaching load can be determined if it is assumed that the third quarter was the equivalent in total student credit hours taught, with the average of the other two quarters.

In the subjects in which most of the students register, including the two-year curriculum in education, arts and sciences, business administration, secretarial science, and others, students complete the equivalent of 31 semester credit hours a year. In some other curricula more semester credit hours are completed in a year, but these other curricula have very few students enrolled in them. The average student, on a full-time basis, will complete the equivalent of about 32 semester credit hours a year.

A division of 14,360 by 32 would indicate that there were 449 equivalent full-time students in 1940-1941. This makes due allowance for part-time students and those in the institution for one semester, only, computed on an equivalent full-time basis.

To compute the number of equivalent full-time instructors, each instructor is considered to be a full-time instructor if employed full time, except that allowances are made for such time as he devoted to major administrative and supervisory duties and non-credit teaching duties. Minor duties, which all instructors are expected to perform, are disregarded. Computed on this basis, there were 18.5 equivalent full-time instructors in the college in 1940-1941.

A division of the number of equivalent full-time regular students, 449, by the number of equivalent full-time instructors, 18.5, is 24.3. Hence, in 1940-1941, there were 24.3 equivalent full-time students for each equivalent full-time instructor. This is a high ratio for a college but is not much higher than would be expected in an institution of junior college grade. The ratio is likely to be considerably lower this year, with the decline of about 20 percent of enrollment.

Credit Hours per Instructor: The average number of credit hours, per semester per instructor, is determined by dividing the total number of credit hours taught by all instructors by the total number of full-time instructors. Sections of the same class are counted as different classes. In 1940-1941 there were taught a total of 263 credit hours the first semester and 275 credit hours the second semester, as reported by the officers of the institution. Since the institution operates on a quarter basis, this is either a report for two quarters, or equivalent figures in terms of semesters. However, in either case, the average credit-hour teaching load can be determined.

The average number of credit hours a semester would be 269 for the 18.5 equivalent full-time instructors. This would be an average of 14.5 credit hours per instructor. This is not too heavy an average load but could be reduced by the offering of fewer subjects and the maintenance of larger classes.

Student Credit Hours per Instructor: Student credit hour registrations for 1940-1941 were 7,245 the first semester and 7,117 the second semester, as reported by the officers of the college. This would be an average of 7,181 student credit hours a semester. This number, divided by the number of equivalent full-time instructors, 18.5, gives an average of 388 student credit hours per equivalent full-time instructor. This seems like a heavy average teaching load for college instruction but, again, attention should be called to the fact that the work is of junior college grade and many colleges and universities have heavier average teaching loads in the first two years than has this college.

Average Teaching Loads by Subjects: The three measures of teaching load, that have been applied to the institution as a whole, may be applied to the several subjects of instruction. Such analysis will show in which subjects teaching loads are light and in which subjects they are heavy according to the three measures used. In such determination, it will be desirable to make allowance in certain subjects in which teaching loads may be heavy without detriment to the quality of instruction or must be light because of the nature of the subjects and the usual methods of teaching them. The average student credit hour teaching load, the number of credit hours per instructor, and the number of equivalent full-time students, each per equivalent full-time instructor, by subjects, for 1940-1941, are shown in the table on the following page.

Subject	Equated Full-Time Instructors	Average Semester Student Credit Hours	Average Semester Credit Hours	Measures of Teaching Load for Equivalent Full-Time Instructor		
				Student Credit Hours	Credit Hours	Equivalent Full-time Students
Orientation	0.1	141.5	3	1,415	30	88
Psychology	0.7	567.5	10	811	14	51
Social studies	1.5	1,207.5	27	805	18	50
Mathematics	1.2	638	24	532	20	33
Art	0.3	150	4	500	13	31
Physical education	0.4	175.5	8.5	434	21	27
Chemistry	1.1	477.5	15	434	14	27
English	3.6	1,266.5	52.5	352	15	22
Education	1.7	570.5	18	336	11	21
Biology	1.2	401.5	18	335	15	21
Business and secretarial science	3.2	869	40	272	13	17
Physics	0.6	145	5	242	8	15
Music	0.8	182.5	9	228	11	14
Drawing and engineering	0.8	163	14	204	18	13
French	0.6	107.5	10	179	16	11
German	0.7	110	10	157	14	10
Library science	0.0	8	1	-	-	-
Total	18.5	7,181.0	269			
Average				388	14.5	24.3

Subjects in junior college years having 500 or more student credit hours per instructor need, as a rule, the time of more instructors. Subjects having fewer than 300 student credit hours have too much instructional time, unless some other factor enters to make it necessary to devote more time to the subject. In general, the loads may be classified as follows:

Heavy Loads	Acceptable Loads	Light Loads
Orientation	Art	Business and secretarial science
Psychology	Physical education	Physics
Social studies	Chemistry	Music
Mathematics	English	Drawing and engineering
	Education	French
	Biology	German
		Library science

No consideration need be given to the heavy teaching load in orientation since only 0.1 of the time of an instructor was devoted to it.

The teacher of psychology also teaches education. More than one instructor's time is needed for teaching psychology alone. It is recommended that his work in education be absorbed by teachers of that subject and that he devote his whole time to the teaching of psychology.

The teachers of social studies have extremely heavy teaching loads. There are four of them. One teaches business and secretarial science two-thirds of his time. Another teaches mathematics and chemistry more than three-fourths of his time. Another teaches physical education nearly a third of his time. Another teaches business and secretarial science more than half of his time. Since the teaching loads in business and secretarial science are very light, it is recommended that the two instructors that teach subjects in business and secretarial science and in social studies devote much more of their time to teaching the social studies and much less to the teaching of business and secretarial science and, thus, equalize the average teaching loads in these subjects.

The teaching load in mathematics is very heavy, but the teaching loads in physics and in drawing and engineering are very light. Since the teachers of mathematics teach these other subjects, it is recommended that they devote more time to the teaching of mathematics and less to the teaching of physics and drawing and engineering.

Elsewhere it was shown that a very large number of credit hours were offered and taught in business and secretarial science. The college is specializing too much in this subject. It is attempting to give distinctive training for stenographers, legal

secretaries, business machine operators, bookkeepers and accountants, civil service employes, medical secretaries, court reporters, and other clerical occupations. Among highly specialized courses in business and secretarial science are the following:

Legal shorthand
Business law
Law: contracts, agency
Law: negotiable instruments, personal property, security relations
Law: business organization, real property

The last three of these courses should be included in the course in business law. There is no need for such specialization. Neither should legal shorthand be offered in a small institution.

Other specialized courses are:

Medical vocabulary
Medical dictation
Advanced medical dictation
Medical filing
Medical secretarial procedure
Coordinated practice (in medical office)

Such high specialization is not warranted in the training of medical secretaries.

Other highly specialized courses taught in business and secretarial science are:

Civil service preparation in typewriting
Civil service preparation in shorthand
Principles of court reporting

There is no criticism of the courses for legal secretaries, medical secretaries, civil service employes, and court reporters. The fault lies in dividing about 400 students among all the subjects taught, then again dividing those who choose business and secretarial science among general office workers and specialized office workers, and then dividing specialized office workers among four specialties. Such procedure makes the average teaching loads in business and secretarial science very light, in this subject in which teaching loads are usually heavy. Such a high degree of specialization in business and secretarial training is not to be found in the junior colleges of large cities having several times the population of Montana.

The light load in physics can be made heavier if the instructor of physics will devote more time to teaching mathematics where his time is needed.

The light teaching load in music can be equalized with the fairly heavy teaching load in art, since the same person teaches both subjects.

There is a question as to whether drawing and engineering should be taught in this institution. It is direct duplication of the first two years of engineering taught in the state college. The load is not light on the basis of the number of credit hours taught per instructor but is light on the basis of the number of student credit hours taught per instructor. This means that few students enroll in the courses and the classes, in general, are small. Some years ago, engineering was eliminated from the state university to avoid duplication with engineering in the state college. It would seem that it should be discontinued at Northern Montana College for the same reason.

The teaching loads are light in both French and German. It is recommended that one of these languages be discontinued. It makes little difference which of these languages is retained since neither of them are popular. If one is eliminated, the enrollment in the other probably would be nearly doubled, but there would still be a light load for one full-time teacher.

Teacher Training:

Scope of the Teacher Training Program: Northern Montana College trains teachers for the elementary and junior high school grades and also trains rural teachers for one-room schools. A large proportion of the students of the college enroll in teacher training curricula.

Practice Teaching Facilities: Practice teaching is carried on in five elementary schools and one junior high school of the Havre public school system. The public school teachers are the critic teachers. The students are supervised by a director of student teaching on the college faculty. The system is economical. However, a considerable burden is thrown upon the supervisor of student teaching, due to the fact that most of the public school teachers are poorly trained for work as critic teachers. Most of them have completed only a two-year college curriculum, and cannot be compared with the highly trained critic teachers in the public schools of Dillon where some of the teachers for the elementary schools are trained. However, the state pays considerable in the form of additional salaries to secure the services of highly trained teachers for the Dillon elementary schools and for practice teaching privileges in those schools.

Last year 73 students practiced teaching in the Havre public elementary schools, divided among the three quarters. Also, one student did practice teaching in the local high school.

Students receive one hour of credit for a half hour of observation each day for a college quarter. They receive four hours

of credit in practice teaching for one and a half hours of practice teaching each day for a college quarter.

Practice teaching in Havre has an advantage in that there are enough critic teachers so that not more than one student need be assigned to a critic teacher each quarter.

Summer Session:

For the last few years the institution has held a summer session for nine weeks each summer. Enrollment for typical years has been as follows:

Year	Number of Students
1936	115
1939	91
1940	98
1941	77

In 1940, only 82 credit hours were taught and only 1,130 student credit hours were taught. Of 32 summer session classes, 24 had fewer than 15 students enrolled. The average size of class was 12 students.

Salary rates of instructors are only $300 for the nine weeks of the summer session. This is considerably less than the rates for the quarters of the regular session. Student fees are collected but the expenses are met as are the expenses of other quarters, from appropriations.

Three full-time and two part-time instructors remained for the summer session and three additional instructors were employed. If these employes can be considered to be the equivalent of 7 full-time instructors, each instructor taught, on the average, 12 credit hours and 161 student credit hours. These are light loads, but the salaries are only about half the regular session salaries.

Because of small demand for summer session study, it would be logical to discontinue the summer session. However, as long as salaries are only $300 for nine weeks of service, and only a few instructors are employed, the cost will not be greater than for the regular session and the summer session may as well be continued so long as enrollment is sufficient to keep the cost reasonably low per student, and so long as the expense is kept commensurate with the enrollment.

Extension:

Extension classes were taught a few years ago, but lack of enrollment of students caused their discontinuance. They are still offered but none are taught.

Correspondence courses are being taught. Last year 18 students were enrolled for 90 quarter credit hours of college correspondence study. This is a very small enrollment.

Fees of $2.50 per credit hour are charged and instructors are paid 75 percent of the fees collected.

Because very little correspondence study is taken from this college and because the standards of correspondence study can be better protected if given from only one center, it is recommended that correspondence study be transferred to the state university. It costs students no more to send mail to and from Missoula than to and from Havre. Central administration of correspondence study should improve the quality of that type of work and reduce the cost of administration.

Library:

The library is located in very unsuitable quarters in the basement of a church. Not only is the reading room dark, but the stack room is not adequate and the building is not conveniently located for the classes that are held on the college campus. The reading room will seat 88 students at the tables and was not filled at the time of observation. According to the standard, which requires a library to seat 20 percent of the number of enrolled students, the size of the reading room is adequate. However, students use the library for a study hall and it is planned to purchase tables for 48 additional students.

The library has 13,557 bound volumes of which only 550 are bound magazines and government documents. This library is sufficiently large for a junior college of 402 students. Last year 885 volumes were added to the library of which 850 were from appropriated funds amounting to $1,500. This is just about the right amount for annual additions to the library stock for a college of 400 students.

There is only about 5 percent duplication of library books and only about 1 percent that are not used at some time during the year by students.

Other data relating to the library and its operation are entirely satisfactory.

Bookstore:

The bookstore is operated by the business manager and his secretary, for the sale of textbooks and a few school supplies. It is operated at the least possible expense and books are sold at only 10 percent above cost price, which is below list price.

Student Welfare Enterprises:

Student Guidance and Counseling: The college catalog devotes seven pages to an outline of vocational possibilities in the curriculum of the institution. A considerable program of survey and scholastic aptitude testing is maintained. The dean of women serves as an adviser for women. The institution is doing as well as can be expected in guidance and counseling, considering the broad curricular program it is attempting to maintain with a limited staff and the consequent limitations of time of the staff for guidance activities.

Health and Medical Service: The institution maintains no health and medical service. An institution in which 75 percent of the students are away from home and in which nearly 50 percent live more than 100 miles from the institution should maintain some health service. About a minimum that should be maintained should be an annual physical examination, vaccination and immumization, a weekly clinic of two hours, and hospitalization, not to exceed a certain amount, such as $50 a year for any one student. For this service a fee, such as $2 a quarter, amounting to $6 a year, should be charged.

Residence and Dining Halls: A men's residence hall, designed to accommodate about 50 students, is now under process of construction.

A women's residence hall was completed in 1936, from funds raised by a bond issue, supplemented by federal PWA funds. The women's residence hall has a capacity for 110 students and 100 are now housed in it. Students living in the dormitory are charged at the rate of $2.50 a week for room rent, or approximately $90 a year, assuming that each room is being rented for 36 weeks.

A dining hall is operated in the women's residence hall for dormitory students. The charge for board is at the rate of $4.50 a week, or approximately $162 a year of 36 weeks.

The residence hall account is kept by the business manager. It is charged for repairs, heat, light, water, and telephone service. The dean of women and the director of the residence hall are furnished free board and room. The salary of the dean of women is paid from state funds, and she devotes little time to the operation of the dormitory. The director of the residence hall receives half of her salary from state funds and half from residence hall funds. She devotes a part of her time to teaching.

The women's residence hall bonds are payable solely from the income received in operating the residence hall, including including income from room rentals and from board furnished to the students. The amount of the outstanding bonds on June 30, 1941, was $134,000 of which $1,000 was in default. The balance in the residence hall fund on the same date was over $5,000 but sufficient money had not been transferred to the state treasurer to cover the default.

Such a condition should not be allowed to exist and the bonds should be paid when due. It appears that interest and principal can be paid when due if the school authorities plan the operation of the residence hall with care and if the number of students living in the residence hall does not decline sharply. If the income from operating the men's residence hall can be used for paying principal and interest on the women's residence hall bonds, these bonds should be retired with little difficulty.

Scholarships: There are three kinds of scholarship students in the institution.

There were 36 freshmen in the institution on honor scholarships, in 1940-1941. These scholarships are granted by the executive secretary of the University of Montana to a student certified by the high school principal as of high scholastic rank. The number granted in a high school graduating class depends on the size of the high school. These scholarships are granted for attendance at any of the state institutions of higher education. Northern Montana College did very well to enroll 36 honor students. The stipend is exemption from the payment of regular state fees, amounting to $50 for the freshman year.

Nine sophomores were granted the advanced scholarship, which is awarded strictly on the basis of scholarship to 5 percent of students enrolled above the freshman year. The stipend is also exemption from the payment of the state fees, amounting to $50 a year.

There were two medical secretarial scholarship students. This scholarship stipend is exemption from all state fees, including non-residence fees.

In addition to these scholarships, there are ten small loan funds donated by various organizations and individuals, and available to needy students in good scholastic standing, who can furnish security for repayment of the money borrowed.

Sponsored Student Activities:

Intramural Sports: The college conducts an intramural sports program independently of the intercollegiate athletic program. Of the 507 students enrolled last year, 90 men and 35 women participated in intramural sports. This is only about 25 percent of the enrolled students. Intramural sports should be further developed so that more of the students will participate.

Intercollegiate Sports: The institution is a member of the Montana Intercollegiate Athletic Conference and participates in contests in basketball, track, baseball, tennis, and golf. Contests are held with Eastern Montana Normal College, Polytechnic Institute of Billings, Montana School of Mines, Montana State Normal College, and Carroll College. The athletic program is supported from income

from athletic contests and amounts that are budgeted from the student activity fund. It is said that the athletic program is being operated on a self-supporting basis and that all expenses of the program were paid from $147.94 game receipts and $1,120 budgeted from the student activity fund.

Dramatics: A dramatics club, sponsored by one of the instructors, gives students practice in selecting, casting, staging, make-up, directing, and acting.

Music: Music organizations include a college band, men's glee club, women's glee club, and a women's chorus, in which a total of 107 students participated last year.

Other Activities: Students participate in a number of forensic events, including the state debate tournament, the oratorical and extemporaneous speaking contest, and various intercollegiate debates.

There are no fraternities but adequate provision is made for social functions.

The students publish a paper every alternate week and a student literary periodical three times a year.

A representative student governing body is functioning, with veto power residing in the president of the institution.

Physical Plant:

Adequacy of Plant: The campus and grounds of Northern Montana College consist of about 60 acres of land. They are fully adequate in size for the needs of the institution. A little landscaping has been started but landscaping is not yet well developed.

The college rents from the Havre school district the ground floor of the West Addition of the Havre High School building and the use of the high school auditorium and the high school gymnasium. The West Addition is used for the administrative offices. The college pays $2,200 a year rent and this includes heat, light, and janitorial service. Maintenance costs are about $250 in addition. The arrangement is not satisfactory for several reasons, among which is the distance of the administrative offices from the college campus.

The college rents the basement of the Presbyterian Church for use as a library and a few classrooms. It pays $900 a year as rent and an additional $1,250 a year for heat, light, water, and janitorial service. This building is also removed from the campus and the arrangement is very unsatisfactory.

Buildings on the campus, owned by the state, include a women's residence hall, a men's residence hall, nearing completion, and two small classroom buildings.

The women's residence hall was completed and first occupied in 1936. It is a four-story building above a basement, constructed of brick and hollow tile. It has a wood shingle roof. Corridor floors are of terrazzo and room floors and woodwork are oak. It has a large, beautifully furnished reception room. It contains a kitchen and a dining room, a laundry, and several pressing rooms. The building is very satisfactory for living accommodations for 110 women students.

A men's residence hall is nearly completed. It is designed to accommodate about 50 students. It is frame construction and is being built with WPA labor. One part was a former public relief building which was no longer needed. This building was moved three miles to the campus of the college. The rest of the building is new. Reconditioned, used radiators are being installed.

Pershing Hall is used as a classroom building for the teaching of commercial subjects and various academic subjects. It is a two-story building over a basement. It was constructed of salvaged brick from buildings of Fort Assiniboine that were razed. The bricks are not in very good condition and it may be expected that the life of the building will be relatively short. It was constructed in 1933 by CWA labor. It is used almost exclusively as a classroom, laboratory, and office building. It is not satisfactory. Many of the classrooms and laboratories are too small to accommodate classes of as large enrollment as they should have. Stairs are narrow. Rooms are not readily accessible. The building is usable if not crowded.

East Hall was remodeled, in 1932, from an old pumping station that was located on the campus. The lower part is brick. The state constructed a stucco second story. A front entrance was also constructed. German, art, music, drawing, engineering, and mathematics are taught in this building. The building is usable but not very satisfactory for classroom purposes.

Building Program: From the discussion of the adequacy of the plant, it will have been concluded that there is need for a building or buildings for the housing of (1) the administrative offices, (2) a library, (3) additional classrooms and laboratories, and (4) an assembly room and a gymnasium, or a combined assembly-gymnasium room. Last year the legislative assembly passed an act providing for the submission, to a referendum vote of the people, the question of whether or not the state should issue bonds to raise $350,000 for constructing and equipping of a building or buildings for these purposes. The bonds are to be serial bonds to run for 20 years, with interest at not to exceed 4 percent per annum. The issue is to be secured by an ad valorem tax of one-fourth of one mill on all property of the state subject to taxation. The question will be submitted for vote at the general election in November, 1942.

The college is certain to remain small, for the population of Montana is not large enough to furnish students for six institutions of higher education, any one of which will be large. As a small institution, it would be better to construct one building for all needed purposes than to construct two or three small buildings. The only question to be answered is whether or not the college should be continued. If so, the construction of a building is almost essential. It is unfortunate that this college should be short of buildings, to serve even its limited requirements, while the college at Dillon has a large surplus of plant capacity that is idle because of lack of a sufficient number of students to use the existing plant.

By continuing to use Pershing Hall and East Hall, and in view of the considerable decline of enrollment, it is believed that, unless building costs are increased still further above their present levels, not more than $300,000 of the bond issue will be needed.

Operation and Maintenance: Operation of the buildings is, on the whole, satisfactory. Floors were waxed and presented a good appearance. Furniture was in good repair but some of it was old and needed to be varnished. Window glass was clean. Toilet rooms were clean and odorless and no deodorants were used. Blackboards were clean. The buildings were not in need of repairs though some alteration would help to make them more usable, as has been noted elsewhere.

Receipts and Expenditures:

Means of Financing: The college is financed by funds received from student fees and from appropriations made by the legislative assembly. It is the only state institution of higher education that does not receive income from the federal land grants. The receipts during the last two fiscal years, exclusive of local funds for the residence halls and for student activities, are shown in the following tabulation, compiled from reports of examinations conducted by the state accountant:

Source of Receipts	Amount Received 1939-1940	1940-1941
Student fees and miscellaneous income	$19,387.21*	$22,298.07*
Appropriations from the university millage fund	62,154.51	65,317.69
Total receipts	$81,541.72	$87,615.76

*These funds may be expended only if appropriated by the legislative assembly. During each of the two years, the appropriation was $16,000.

Appropriations for the current biennium total $103,000 for each year, and, in addition, an appropriation of $17,000 has been made for ventilation equipment, for building remodeling, and for installing a curriculum in industrial arts. Thus, for ordinary operations, the college has approximately 27 percent more money available for expenditure during each year of the current biennium that it had in 1940-1941, although the enrollment has dropped by a very large percent. Ordinarily, a pronounced decrease in enrollment should result in decreased operating costs. It is recognized that the college has been operating on a restricted expenditure basis, although the desirability of some of the activities of the college may be questioned, and that salaries have been extremely low, but it should be apparent that an increase of 27 percent in expenditures is not needed after proper adjustments have been made. It is recommended that the state board of education be requested to order the expenditures of the college to be limited to a figure considerably below that established by appropriation for the current year and, also, for the next fiscal year if there is not a large increase of enrollment.

Expenditures: The expenditures of the college, during the last two fiscal years, exclusive of disbursements for operating the residence halls and for student activities, are shown in the following tabulation, also compiled from the examination reports of the state accountant:

Purpose of Expenditure	Amount Expended 1939-1940	1940-1941
Operating expenses:		
General administration	$14,627.21	$15,812.49
Educational system	45,659.51	48,559.08
Physical plant	8,692.78	9,778.79
Total	$68,979.50	$74,150.36
Repairs and replacements	3,994.83	510.13
Capital outlays	5,169.66	6,627.45
Total expenditures	$78,143.99	$81,287.94

The state accountant's examination report covering the last fiscal year calls attention to certain expenditures for the construction of the men's residence hall which appear to have been made in violation of existing statutory provisions. Those responsible for administering the funds of the institution should exercise extreme care in avoiding any transactions that are not authorized by law.

Unit Costs:

Expenditures for 1940-1941 amounted to $74,660.51. These include expenditures for the summer season. Expenditures for operation alone amounted to $74,150.36.

Enrollment for the regular session was 507 and, for the summer session of 1940, enrollment was 98. The summer session is one-third as long as the regular session. One-third of 98 equals 33. Hence, the enrollment of 98 students for the summer session is equal to 33 students for the regular session, which added to the 507 students of the regular session, makes 540 students.

There were 449 equivalent full-time students in the regular session. In the summer session 1,370 student credit hours were completed. This is equivalent to the work of 29 full-time students for a full regular session. Thus, in the four quarters there were 478 equivalent full-time students for a regular session.

The unit costs on several bases may be shown as follows:

Total cost per student enrolled for regular session, plus one-third students enrolled for summer session	$138.26
Operation cost per student enrolled for regular session, plus one-third students enrolled for summer session	137.32
Total cost per equivalent full-time regular session student, including summer session enrollment	156.19
Operation cost per equivalent full-time regular session student, including summer session enrollment	155.13

The last figure is probably the most significant unit cost figure.

All of the cost figures, thus far presented, are very low. This results largely from (1) low salaries paid teachers, considering their excellent qualifications, (2) fairly heavy average teaching load, and (3) lack of adequate physical plant, which keeps operating and maintenance costs low.

It is likely that unit costs will be greater than for the last two years, for each year of the current biennium, due to a notably marked decrease in enrollment and an increase of 27 percent in appropriations. The institution has not had sufficient funds in the past, but considering the decline of enrollment, very little increase of appropriations was needed.

Unit costs by subjects cannot be computed because, while accounts are kept separately by subjects, the time of instructors

is not properly allocated to the subjects they teach. In this college most of the instructors teach two or three different subjects. If the salary of an instructor who teaches two or more subjects is all charged to only one of the subjects, obviously the accounts are incorrect. For example, the accounts show no salaries and wages charged to physical education, yet two instructors devoted a part of their time to teaching that subject.

It is recommended that the salaries of instructors be allocated to the several subjects taught on the basis of the proportion of time each instructor devotes to the teaching of each subject.

Value and Cost of the Services Rendered:

The furnishing of two years of college education to nearly 500 equivalent full-time students, at a cost of $155.13 a student per year, is economical education. Instructors' salaries have been low and some instructors, holding doctors' degrees, representing years of advanced training, and several thousands of dollars of expense, and loss of earnings for the years devoted to preparation, receive lower salaries than the employe in charge of buildings and grounds. The state has received full value for the money it has expended for the operation of this college during the last biennium.

Whether or not the college is to be continued does not depend upon the question of whether or not it has served the state economically and well in the past. Its establishment has reduced enrollment at the other colleges. If it has given education on an economical basis, but has increased the cost of education in the other colleges by reducing enrollment, its establishment may not have been an economy when the total cost of higher education is taken into consideration. Moreover, if a new building is constructed and salaries of instructors are increased, both of which should be done, the cost per student will not be so low in the future.

Summary of Recommendations:

In consideration of the data presented in this report, it is recommended:

Recommendations Not Requiring Legal Action:

(1) That Northern Montana College remain a two-year college and that, in view of the fact that no students were enrolled in the third year of college last year and that, if students had been enrolled, their instruction would have been expensive because of the small number, the third year offerings be discontinued.

(2) That in the interests of both better instruction and economy, the number of credit hours offered by the college be reduced.

(3) That there be less padding of the college catalog by the offering of courses that are not taught.

(4) That subjects be not offered on request of students unless a sufficient number of students desire the course to warrant its being actually taught.

(5) That courses that are offered but not taught because of insufficient enrollment be dropped from the list of offerings the succeeding year.

(6) That most of the courses of very small enrollment be discontinued from the curriculum or be scheduled only for alternate years as a means of increasing their enrollment, and that, when offered in alternate years, the year they will be taught be indicated in the printed announcement of the courses.

(7) That, as a measure of economy, highly specialized courses, for which there is so little demand that classes have only from 1 to 9 students, be discontinued.

(8) That the highly specialized courses in business and secretarial science especially designed for the training of legal secretaries, medical secretaries, civil service employes, and court reporters, be discontinued on the ground that the college is too small to warrant the giving of highly specialized curricula, the demand for such specialized secretarial employes in Montana is too limited, and the institution should confine its efforts in the business and secretarial science field to the training of well-qualified stenographers, general office workers, and accountants.

(9) That the two-year curriculum in engineering be discontinued on the ground that it duplicates the training in engineering as given to students in the first two years at the state college.

(10) That either French or German be discontinued as a subject of study on the ground that the enrollment in both of them, if combined for either of them, would still constitute a light teaching load for one teacher.

(11) That the director of the residence hall be made responsible directly to the dean of women and that the campus foreman be made responsible to the business manager.

(12) That, as a means of reducing the heavy teaching loads of instructors, the number of courses be reduced.

(13) That teaching loads be adjusted as between psychology and education; social studies and business and secretarial science; mathematics and physics, drawing and engineering.

(14) That, as a means of protecting the quality of work and reducing the cost of administration, all correspondence study be transferred from this college to the state university.

(15) That a health service fee, e.g. $2 a quarter, be charged to cover necessary health and medical service, such as physical examination, vaccination and immunization, a weekly clinic at the college, and hospitalization to a limited amount per student.

(16) That the intramural sports program be further developed so that more students will participate.

(17) That, in accounting practice, the salaries of instructors be allocated to the accounts of the several subjects of instruction on the basis of the proportion of time each instructor devotes to the teaching of each subject.

(18) That, as a measure of economy and in view of a heavy drop in enrollment and an increase of about 27 percent in appropriations, the state board of education be requested to limit the expenditures of the college to an amount somewhat less than that established by appropriations for the current year and, also, for the next fiscal year if there should be no large increase of enrollment next year.

(19) That those responsible for administering the funds of the institution exercise care in avoiding any transactions that are not authorized by law.

(20) That, if the people vote favorably at the general election in November, 1942, on the question of the issuance of bonds for the raising of not to exceed $350,000 for the construction of a building or buildings at Northern Montana College, (1) only one building be constructed for the several purposes to be served and (2) not more than $300,000 of the amount authorized be used unless the price of building construction should further increase before the contract is let.

(21) That the policy of defaulting on the payment of residence hall bonds that are due, when there is an adequate balance in the residence hall fund to pay them, be discontinued; and that if the payment of any bonds is still in default, such bonds be paid immediately from the balance in the residence hall fund.

Recommendation Requiring Legal Action:

(22) That the law stating the large number of purposes for the institution be repealed.

STATE OF MONTANA

GOVERNOR'S COMMITTEE ON REORGANIZATION

AND ECONOMY

MONTANA STATE COLLEGE

(Report No. 53)

January 5, 1942

Prepared by

Griffenhagen & Associates

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REPORT ON

MONTANA STATE COLLEGE

Introduction:

Montana State College was established by legislative act, in 1893, which provided that "The college of agriculture and mechanic arts of the state of Montana is established and located at the city of Bozeman, or within three miles of the corporate limits of said city....." The institution was opened the year it was established. Its establishment enabled the state to take advantage of the federal land-grant acts of 1862 and 1890.

The agricultural experiment station was established in 1893 in accordance with the provisions of an act of Congress, in 1887, known as the Hatch act. This act provided grants of federal funds for the establishment of such stations. An act of 1907 provided that "The entomologist of Montana agricultural college and experiment station shall be known as the state entomologist of Montana." In 1907, a substation was established for the purpose of carrying on experimental work in horticulture, which the state board of education located at Corvallis. Also, in 1907, an experiment substation was established by legislative act in Fergus County. A few years later a substation was established by legislative act at old Fort Assiniboine, on land belonging to Northern Montana College. The Montana grain inspection laboratory was established, by legislative act, to be directly in charge of the agronomist of the Montana agricultural experiment station, "who shall be known as the director in charge of the laboratory" and to be under the general supervision of the director of the Montana agricultural experiment station.

The Montana state college extension service was established in 1913. Its establishment enabled the state to take advantage of the provisions of the Smith-Lever act, passed by Congress in 1914, the Bankhead-Jones act of 1924, the Capper-Ketcham act of 1928, and other acts providing for the grant of federal moneys for the extension of agricultural education to the farms and homes of the state. The agricultural extension service has found it necessary to provide the means of furnishing information to rural people regarding the provisions of various federal acts, such as the Clark-McNary forestry act, the agricultural conservation act, the soil conservation act, the rural electrification act, and other federal laws affecting farmers.

Extent of Services Rendered:

Location: Montana State College, the main station of the agricultural experiment station, and the central office of the agricultural extension service, are located at Bozeman. The location is fairly satisfactory, though it would have been in the interests of both education and the taxpayers if the state university and the state college had been established as a single college in or near one of the larger cities of the state. The agricultural experiment station has substations located at three outlying points and cooperates with two federal stations at other locations. The agricultural extension service is established for the work of county agents in 48 counties and renders various other services to many of these and other counties.

Territory Served: The extent to which Montana State College serves a local or widespread area of the state, in class instruction activities, may be indicated by the distances from Bozeman to the homes of students. These distances, for the regular session of 1940-1941, may be shown as follows:

Distances to Homes of Students from Bozeman	Enrolled Students Number	Percent
Within 10 miles	251	14.2
From 10 to 50 miles	91	5.1
From 50 to 100 miles	114	6.4
More than 100 miles	1,319	74.3
Total	1,775	100.0

It will be noted that 80.7 percent of the students came from homes more than 50 miles from Bozeman and 74.3 percent came from homes more than 100 miles from Bozeman. These percentages are very high and show that the state college is rendering more than local service to the state.

Students attend the institution from 19 states and territories and from Canada. In 1940-1941 there were 80 out-of-state students enrolled, of which 11 were graduate students and 69 were undergraduates. The largest numbers of out-of-state students came from the following states and countries: Wyoming (12), Canada (10), California (8), North Dakota (8), Iowa (7), Illinois (6), and Minnesota (5). There was 4.5 percent of the enrolled students from other states and countries. Non-resident fees, amounting to $75 for the regular session are charged.

Growth and Size of the Institution: The growth of regular session enrollment of college students, over a period of recent years, has been as follows:

Year	Regular Session Enrollment
1930-1931	1,204
1933-1934	1,034
1936-1937	1,338
1939-1940	1,801
1940-1941	1,775
1941-1942, to November 3	1,730

Regular session enrollment reached a peak in 1939-1940. It is possible that cumulative enrollment, by the close of the present college year, may again reach the cumulative enrollment figure of 1939-1940. The enrollment for the first quarter was greater in 1941-1942 than the enrollment for the first quarter last year. This is one of three or four colleges in the United States that had an increase of initial enrollment this year. The prospects for next year and immediately succeeding years are for decreasing enrollment.

On October 7, 1941, there were 1,710 students enrolled. This compares with 1,691 students enrolled on October 1, 1940, or an increase of 19 students.

One reason for the larger number of students in recent years is the enrollment of students in the curriculum for nurses. They are located at Bozeman, Great Falls, and Warm Springs. Only those nurses in the Bozeman hospital attend classes on the campus while at the hospital. Last year 183 nurses were enrolled and this year 174 nurses are enrolled.

Functions:

The statutes provide that the college "has for its leading objects and purposes, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the state board of education, and any subordinate boards by such state board appointed, may prescribe."

The functions of the institution may be said to be instruction, research, and extension. Instruction is taught in four colleges, namely: agriculture, engineering, science, and household and industrial arts. Organized research is carried on, largely, in the agricultural experiment station. An engineering experiment station has been in existence for 17 years, but no money has ever been appropriated for its support. A little experimentation is being done in science and home economics in connection with the agricultural experiment station, but the scope of such research in science is limited to needs of agriculture. Extension work in agriculture is carried on by the Montana agricultural extension service.

Nursing education was established in 1938, by action of the state board of education, in cooperation with three hospitals, for the purpose of training nurses for the state by providing a course of

combined college and hospital training, though some nursing instruction has been given since 1917.

Due to the requirements of the federal laws providing for their support, the functions of the state agricultural experiment station are much like those of such stations in other states. Briefly, the station must, under the Hatch act, conduct "original researches or verify experiments on the physiology of plants and animals," in accordance with a number of specifications of what shall or may be included in such researches. Other extension of functions or elaboration of functions that are stated in the Hatch act are required for acceptance of the benefits of the Adams act, the Purnell act, and the Bankhead-Jones act.

The agricultural extension service promotes the dissemination of information through publications, radio addresses, extension classes, short courses, news releases, visual instruction, 4-H club organizations, and county agents, in various fields of agriculture, such as agronomy, horticulture, dairy, livestock improvement, irrigation, agricultural economics, home economics, nutrition, and the like. Its general objectives are stated to be "to work with rural people on general living conditions and to increase the general income of rural people."

The Montana grain inspection laboratory was established in 1913 for the purpose of determining the milling and baking quality of Montana wheat and the germinating capacity, quality, and purity of field crop seeds. Its purpose is stated to be "to make the studies necessary to establish the grade and quality of the wheat and other grains grown in the state by scientific tests, to disseminate the facts, and to help the grain growers and dealers of the state to establish the full market value of their products in the markets of the world. It is provided that the laboratory shall make grade and dockage tests for citizens.

The duty of the state entomologist is to conduct field investigations of the injurious insects of fruits, vegetables, grains, grasses, hay crops, root crops, trees, and the like, and to publish and demonstrate the best remedies to be employed.

The various instruction departments of the institution have outlined their specific objectives. Samples of some of the briefer of these may be shown as follows:

General agriculture - "The general curriculum is intended for students who desire broad agricultural training and is recommended for those preparing for fields requiring a general knowledge of agriculture."

Dairy manufacturing - "The curriculum in dairy manufacturing is organized to give students training in fundamentals and modern methods of processing and preparation of dairy products for markets."

Mechanical engineering - "The curriculum in mechanical engineering is designed to provide broad training in the design, construction, testing and operation of power and manufacturing machinery and in the management of manufacturing enterprises."

Engineering physics - "The object of the curriculum in engineering physics is to provide basic training for research in radio telegraphy, optics and photography, aeronautics, X-ray and radium and other fields associated with the work of the United States Bureau of Standards, electrical laboratories, hospitals and other institutions."

Academic and Professional Recognition:

Montana State College is fully accredited by the Association of American Universities and the Northwest Association of Secondary and Higher Schools. The institution's departments of civil engineering, mechanical engineering, and electrical engineering are accredited by the Engineering Council for Professional Development, which is the recognized society for the accreditation of engineering departments. The departments of chemical engineering, industrial engineering,and others are not accredited by this society because they do not meet all of the required standards for accreditation, but the institution does well to meet the standards of the engineering council in three of its departments. The institution is accredited for instruction in chemistry and industrial chemistry by the American Chemical Society.

General Control:

The statutes provide that "The control and management of the college of agriculture and mechanic arts is vested in the state board of education and in a local executive board." This is the same provision made for the other institutions of higher education in Montana. The statutes also provide that the agricultural experiment station and the agricultural extension service shall be placed under the supervision and control of the state board of education. Also, these are both operated under the direction of the president of Montana State College and the directors of these enterprises are directly responsible to the president of the institution.

Admission of Students:

Requirements for admission to Montana State College are that the applicant "must be at least 16 years of age and must present evidence of good moral character." He must have completed a secondary school curriculum of four years for regular entrance. Such curriculum must include 15 or more units of work. Included in the 15 secondary school units must be three units of English, one unit of American history and government, and at least two other units from each of three groups of subjects selected from (1) mathematics, (2) history and social science, (3) laboratory science, and

(4) foreign languages. Students who do not meet the requirements for high school units must either take extra college units in the subject or pass an examination in the subject in which they are deficient.

Special requirements for admission to curricula in engineering, in chemistry, and in industrial chemistry are three years of mathematics and one year of physics or chemistry, except that if the student has a good high school record and stands well in the college aptitude test, these requirements may be waived, and upon passing mathematics courses in college, he will be considered to have removed all entrance deficiencies. Two years of mathematics are required for registration in the curricula of agriculture, applied science, botany and bacteriology, entomology, home economics, nursing, pre-medical, physical education, secretarial studies, and zoology. Requirements for admission by other means and for advanced standing, for all curricula, are satisfactory.

The registrar applies the regulations of the catalog and consults the deans or the president in cases of doubt.

Classification of Students:

The total enrollment of the institution, for the regular session of 1940-1941, was distributed among the several classification groups as follows:

Classes	Enrollment	Percent
Freshman	677	38.1
Sophomore	507	28.6
Junior	303	17.1
Senior	239	13.5
Graduate	49	2.7
Total	1,775	100.0

It will be noted that a total of 66.7 percent of the students were enrolled in the first two years of college, 30.6 percent were enrolled in the last two years of college, and 2.7 percent were enrolled as graduate students. Thus, it appears that large numbers of students leave the institution before they reach junior classification, though many of the relatively large number of students in the first two years of college are students who failed to meet the requirements for advancement in classification and have been held in their class for two years. However, this should operate for all classes, so that, for classes above the freshman year, the number failing to advance a class, such as into the sophomore year, should be largely balanced by students in the sophomore year who failed to meet the requirements for advancement into the junior year. Hence, it appears that there are fairly large losses of students throughout the four years.

Organization and Staff:

Outline of Organization: An outline of the form of organization of the staff of Montana State College may be presented as follows:

Title of Position	Number of Positions	Months Employed	Annual Salary
President of Montana State College	1	11	$5,733
Secretary to the president	1	12	1,800
Secretary-treasurer	1	12	2,800
Assistant secretary-treasurer	1	12	1,650
Clerk and stenographer	1	12	1,320
Clerk and stenographer	1	12	1,080
Registrar	1	12	2,800
Assistant registrar	1	12	1,500
Assistants (part time - number and wage rates vary - total $2,305.76 last year)			
Assistant dean of men (also instructor of botany and bacteriology)	1	10	1,550
Dean of women	1	12	2,600
Secretary	1	10	900
Director of publications	1	12	2,900
Clerk	1	12	1,020
Assistant director	1	12	2,600
Alumni secretary	1	12	1,000
Clerk	1	12	960
(Professor of botany and bacteriology - included elsewhere)			
Student health director	1	12	2,000
Assistant	1	10	900
Assistant (part time)	1	10	500
Dean of engineering and professor of chemical engineering	1	11	4,650
Secretary	1	12	1,620
Associate professor	1	10	2,800
Professor of architecture (also supervising architect)	1	11	3,700
Clerk	1	12	1,300
Associate professor	1	10	2,600
Professor of civil engineering	1	10	3,500
Associate professor	1	10	2,700

Title of Position	Number of Positions	Months Employed	Annual Salary
Professor of electrical engineering	1	10	$3,700
Associate professor	1	10	2,600
Professor of industrial engineering (also assistant personnel officer)	1	10	3,500
Professor of mechanical engineering	1	10	3,500
Associate professor	1	10	2,400
Instructor	1	10	1,700
Professor of general engineering	1	10	3,000
Instructor	1	10	2,400
Dean of household and industrial arts and professor of home economics	1	10	3,800
Secretary	1	12	1,400
Associate professor	1	10	2,500
Assistant professor	1	10	2,500
Assistant professor	1	9	2,400
Instructor	1	9	2,000
Instructor (part time)	1	9	900
Student assistant (part time)	1	9	450
Assistant professor of home economics and director of the student union	1	10	2,500
Student union assistants	3		
Student union assistants (part time)	28		
Director of food service	1	12	1,600
Cooks and houseboy	4		
Student assistant (part time)	25		
House director-instructor	1	10	1,200
Cook	2		
Student assistant (part time)	13		
Professor of art	1	10	3,200
Instructor	1	10	1,700
Instructor	1	10	1,500
Professor of secretarial studies	1	10	2,700
Instructor	1	9	1,800
Instructor	1	9	1,600
Dean of science, professor of botany and bacteriology, and vice president	1	12	4,300
Secretary	1	12	1,500

Title of Position	Number of Positions	Months Employed	Annual Salary
Professor (also in charge of student health)	1	11	$3,200
Clerk	1	12	960
Directing supervisor of nursing and assistant professor of nursing	1	12	2,000
Various instruction employes in hospitals, employed on nursing revolving fund, range $540 to $1,500	13	12	
Instructor	1	10	1,600
Professor of chemistry	1	9	3,800
Associate professor	2	9	2,700
Instructor	1	9	2,400
Instructor	1	9	1,800
Graduate assistant (part time)	1	5	250
Stockroom manager	1	10	850
Professor of physics	1	9	3,500
Associate professor	1	9	2,300
Associate professor	1	11	2,700
Graduate assistant (part time)	1	10	500
Professor of zoology	1	10	2,700
Assistant professor	1	10	2,200
Graduate assistant (part time)	1	10	500
Professor of mathematics	1	9	3,500
Associate professor	1	9	2,700
Assistant professor	1	9	2,200
Assistant professor of mathematics and agricultural economics	1	11	2,600
Instructor	1	9	2,000
Professor of physical education	1	12	3,200
Instructor	1	12	2,500
Instructor	2	12	2,200
Instructor	1	12	2,000
Professor of English and head of the department of English	1	9	3,400
Professor of speech and director of entertainment	1	9	2,800
Instructor of music	1	9	1,600
Instructor of music	1	9	1,400
Instructor of music	2	9	Fees

Title of Position	Number of Positions	Months Employed	Annual Salary
Professor of English (Cont'd)			
Assistant professor	1	9	$2,200
Assistant professor	1	9	2,100
Instructor	2	9	1,800
Instructor	1	9	1,900
Instructor	1	10	1,600
Assistant instructor	1	4	600
Professor of history	1	10	2,800
Assistant professor	1	10	2,100
Professor of modern languages	1	9	3,100
Assistant professor	1	9	2,000
Instructor	1	9	1,600
Instructor (part time)	1	8	240
Custodian of military equipment (part time)	1	10	250
Librarian and professor	1	12	2,800
Assistant librarian	1	12	1,800
Cataloger	1	12	1,800
Assistant	1	12	1,500
Assistant	1	12	1,260
Professor of education and psychology	1	12	2,800
Critic teacher (part time)	6	10	200
Principal of public high school	1	10	400
(Supervising architect - included as professor of architecture)			
Superintendent of service shop	1	12	2,100
Carpenter	1	12	2,100
Plumber-electrician	1	12	2,100
Utility man	1	12	1,272
Janitor	12	12	1,140
Janitress	1	9	855
Janitress	1	9	621
Superintendent of heating plant	1	12	2,100
Steam engineer	1	12	1,740
Engineer	2	12	1,620
Fireman's helper	1	12	1,140
Watchman	1	12	1,260
Mail and express man	1	12	1,500
Telephone operator	1	12	960
Dean of agriculture and director of the agricultural experiment station	1	12	4,800
Secretary	1	12	1,600
Stenographer	1	12	1,020

Title of Position	Number of Positions	Months Employed	Annual Salary
Professor of agricultural economics and head of the department	1	11	$4,200
Secretary	1	12	1,380
Stenographer	1	12	1,080
Stenographer	1	12	785
Professor	1	11	3,800
Associate professor	1	11	3,200
Assistant professor	1	11	3,400
Assistant professor	1	11	3,000
Assistant professor	1	11	2,500
Instructor	1	11	2,000
Instructor	1	11	1,800
Research fellow (part time)	1	9	900
Research assistant (part time)	3	9	450
Professor of agricultural education	1	11	3,600
Clerk-stenographer	1	12	1,375
Graduate assistant	1	10	600
Professor of agricultural engineering	1	10	3,600
Professor of agronomy and agronomist	1	12	3,600
Clerk-stenographer	1	12	1,260
Stenographer	1	12	960
Stenographers (part time - number and amounts paid vary)			
Associate professor (also associate pathologist U.S.D.A.)	1	12	3,200
Associate professor	1	12	2,860
Associate professor	1	12	2,700
Assistant agronomist	2	12	2,600
Instructor	2	12	2,000
Research assistant (part time)	1	12	750
Foreman	1	12	1,620
Laborers (number varies)			
Superintendent, Montana grain inspection laboratory	1	11	3,000
Stenographer	1	12	840
Seed analyst	1	12	1,200
Laborer	1	12	1,500
Assistant	1	12	960
Laborer (part time - various numbers at different rates and lengths of time)			
Professor of animal industry	1	12	4,500
Clerk-stenographer	1	12	1,500
Stenographer	1	12	960
Associate professor	1	11	3,000
Assistant professor	1	12	2,500
Instructor	1	12	2,000

Title of Position	Number of Positions	Months Employed	Annual Salary
Instructor	1	12	$1,800
Farm foreman	1	12	1,800
Farm foreman	1	12	1,140
Herdsman	3	12	1,500
Truck driver and camp tender	1	12	1,020
Laborer (part time - number and length of employment varies - total 127 laborers and $15,305.36 total cost)			
Laborer (miscellaneous, for various times and amounts of pay, total was 23 laborers and $2,253.96 cost)			
Professor of botany and bacteriology	1	12	3,400
Assistant professor	1	12	2,700
Professor of chemistry and meterology	1	12	3,500
Clerk	1	12	960
Professor-consulting chemist (part time)	1	12	1,700
Assistant professor	1	12	2,400
Instructor	1	12	1,800
Professor of dairy industry	1	12	3,200
Clerk-stenographer	1	12	1,020
Stenographer (part time - total 3 employes and $62.90 cost)			
Professor	1	12	3,200
Instructor	1	12	2,100
Graduate assistant (part time)	1	10	600
Herdsman	1	12	1,500
Assistant herdsman	1	12	1,040
Laborer (part time - total 18 laborers and $1,487.05 cost)			
Professor of entomology (head of department)	1	12	3,600
Clerk-stenographer	1	12	1,440
Assistant professor	1	12	2,700
Assistant professor	1	12	2,500
Assistant	1	12	1,800
Laborer (part time - wages vary)	7		
Professor of home economics (head of department)	1	11	3,400
Stenographer (part time - total cost $222.81)	3		
Assistant professor	1	11	2,000
Research assistant (part time)	1	10	450
Laborer (part time - total amount paid $275.32)	3		

Title of Position	Number of Positions	Months Employed	Annual Salary
Professor of horticulture (head of department)	1	12	$4,000
Clerk-stenographer	1	12	1,300
Stenographer (temporary - $8.40)	1		
Assistant professor	1	12	2,600
Foreman	1	12	1,680
Garden and greenhouse assistant	1	12	1,380
Tractor operator	1	12	1,140
Laborer	2	12	1,140
Laborer (temporary - 21 at various times and rates)	21		
Superintendent of horticultural branch station	1	12	2,000
Entomology assistant	1	12	1,200
Laborer (part time)	17		
Professor of irrigation and drainage (head of the department)	1	12	3,100
Clerk	1	12	1,020
Laborer (temporary - employed at various rates and days)	15		
Professor of library and publications	1	12	2,250
Bulletin editor	1	12	1,800
Assistant director of publications	1	12	2,600
Professor of the veterinary research laboratory (half of salary paid by livestock sanitary board)	1	12	4,500
Clerk-stenographer	1	12	1,200
Professor	1	11	3,700
Associate professor	1	11	3,200
Laboratory technician	1	12	1,400
Laboratory helper	1	12	600
Herdsman	1	12	1,320
Assistant agronomist and superintendent of the Judith Basin branch station (salary paid by the U.S.D.A.)	1	12	2,700
Stenographer (part time)	1	12	210
Farm foreman	1	12	1,500
Tractorman and feeder	1	12	1,080
Cook and attendant	1	12	420
Laborer (part time - total paid $2,097.06)	15		
Superintendent of North Montana branch station	1	12	3,000
Clerk-stenographer	1	12	1,200
Assistant in agronomy	1	12	825
Assistant in animal husbandry	1	12	2,000

Title of Position	Number of Positions	Months Employed	Annual Salary
Farm foreman	1	12	$1,500
Agronomy foreman	1	12	1,065
Farm laborer	3	12	1,020
Laborer (part time - varying days and rates of pay - total $1,020 a year)	29		
Director, Montana State College extension service	1	12	5,000
Secretary	1	12	1,800
Clerk	1	12	1,040
Clerk	1	12	1,060
Clerk	1	12	1,380
Mimeograph operator	1	12	1,080
Rural electrification specialist	1	12	2,400
Agronomy specialist	1	12	3,240
Clerk	1	12	1,260
State home demonstration leader	1	12	3,200
Clerk	1	12	1,200
Clothing specialist	1	12	2,700
Home management specialist	1	12	2,700
Nutrition specialist	1	12	2,700
Clerk	1	12	1,080
Home demonstration agent (salaries vary from $1,800 to $2,500)	14		
Extension land economist	1	12	3,300
Clerk	1	12	1,320
Assistant extension agent	1	12	2,000
Assistant extension agent	1	12	2,200
Extension soil conservationist	1	12	3,200
Extension irrigation specialist	1	12	3,200
Clerk	1	12	1,140
Extension specialist in poultry	1	12	3,100
Clerk	1	12	1,080
Extension specialist in livestock	1	12	2,800
Clerk	1	12	1,200
Extension specialist in horticulture	1	12	3,400

Title of Position	Number of Positions	Months Employed	Annual Salary
State leader	1	12	$3,400
Clerk	1	12	1,260
Assistant state leader	1	12	2,700
State leader	1	12	4,000
Clerk	1	12	1,500
Assistant county agent leader	1	12	3,150
Associate extension agent	1	12	2,400
County extension agent (salary from $1,800 to $3,400)	41	12	
Assistant county extension agent (salary $1,600 and $1,800)	2	12	
Various clerks, foremen, and laborers under the direction of the several county agents			

The number of months of employment has been presented as indicated by the several employes on position description cards, as nearly as can be determined from the cards. In some cases there was lack of a common basis for determining the number of months of employment. Some employes, hired for the whole year, had a month's vacation time and others did not. Some, who had vacations, deducted vacation time and stated they were employed for eleven months and others stated they were employed for twelve months. Likewise some considered the time devoted to instruction duties and others the months for which payments were received as their term of employment and stated the time, variously, as nine or ten months.

Suggestions for Improvement in Organization: A number of faults are evident in the existing form of organization. However, in most cases, the staff is working well as now organized, so that few suggestions for changes will be made. Also, some of the inconsistencies of organization are the result of combinations of jobs caused by the necessity for operating economically, and the correction of which would add to the cost of operating the institution. A few suggestions will be made.

The institution has a full-time dean of women and a full-time secretary to the dean of women for fewer than 700 women students, but the dean of men devotes only half of his time to the duties connected with his position as dean of men and half to teaching and there are about 1,100 men students. Men students need at least as much guidance as do women students. This is particularly true in view of the fact that there are dormitories for the housing of many of the women students and no provision has been made for the housing of men students. Student personnel administration is scattered among the deans of men and women, the deans of the divisions, a professor who has charge of psychological and standardized testing, the registrar, a professor in charge of health service, several employes in charge of student employment, loan funds, and scholarships, and others. The result is largely lack of adequate personnel service and some duplication of efforts.

Student welfare activities are scattered. Guidance and counseling, housing of students, health and medical service, the administration of scholarships and student loan funds, and other enterprises are found in various organization units having no relation to one another and so far removed in interests of those at their heads that there is little opportunity for cooperation. There is no central authority below the president of the institution in charge of student welfare.

The various agencies should be brought together into a division of student personnel. Functions of the proposed division of student personnel would include the following and others of related and similar nature:

Guidance and counseling - educational, vocational, social, emotional, financial, etc.
Direction of freshman orientation.
Administration of student aid, such as scholarships, loan funds, and student employment.
Discipline of students.
Supervision of student housing in dormitories and in private homes.
Direction of student recreation, including intramural sports.
Direction of health and medical service for students.
Administration of centralized personnel records, now scattered in the offices of various deans, where they are inaccessible to others.
Supervision of student enterprises, including the student union, and other enterprises relating to the welfare of students, such as fraternities, dances, and the like.

It is recommended that a dean of students be employed to devote full time to the performance and the direction of the performance of the duties listed. He should direct and lead in the rendering of student personnel service in whatever organization units it is carried on and should have direct charge of officers in charge of the counseling of men and women students, and the student union. The titles of dean of men and dean of women should be changed to counselor of men and counselor of women and these officials should be made responsible to the dean of students. The counselor of men should devote full time to the guidance and welfare of men students. This program would cost about $4,000 or $5,000 for an additional full-time dean of students and additional half time of a counselor of men, but the amount could be saved in the release of the time of deans of colleges for teaching, and the part of the time of several professors, now used for counseling activities, such as the professor who has charge of testing, the professor in charge of student health, and others who are now doing personnel work in an unsatisfactory manner and at the expense of their teaching duties. Their time would then be available for teaching.

It will be noted in the outline that the division of agriculture and the experiment station have an unusually large number of clerks and stenographers. They need many, but it is believed that there are more than are necessary. However, their salaries are paid,

largely, by the federal government as a part of the expense of operating the experiment station and there would be little saving to the state by discontinuing the surplus positions.

Another disadvantage, in the regulations of the federal government in furnishing aid for agricultural colleges, is the provision that requires a duplication of departments. It will be noted that there are two departments of home economics, botany and bacteriology, and chemistry, though the titles of the departments have been slightly changed in some cases. The difficulty is that the grants for research are made for research in agriculture and that the work must be carried on in the agricultural extension station. This is a great disadvantage to the institution, not only because it limits research in these fields to their bearings upon agriculture, but also because the source of funds makes it necessary to separate the research departments from the instruction departments and to place the research departments in the department of agriculture.

Organization for Instruction: The organization for instruction appears, in general, to be logical and satisfactory. The work is organized into the following divisions:

Division of engineering
Division of household and industrial arts
Division of science
Division of agriculture

Each division is headed by a dean and each dean also heads a department of his division and teaches some of the classes in the department he heads.

The division of agriculture and the agricultural experiment station are closely affiliated by staff since the salaries of many instruction and research employes are divided between the two agencies and the employes devote part of their time to each. The dean of the division of agriculture is also director of the experiment station. It is well to keep research and instruction closely connected by interchange of staff and by use of many members of the staff in both types of work.

The division of agriculture trains high school teachers of agriculture, the division of household and industrial arts trains teachers of these subjects, and the various academic departments and a department of education, the latter outside of all divisions, train students of agriculture or home economics who need to teach a second or third subject, for the teaching of academic subjects.

In the college of household and industrial arts are the director of food service, the director of the student union, and the house director, the two latter of whom teach.

It is recommended that the department of education be placed in one of the divisions, probably the division of science would be most suitable. It is further recommended that the special methods of teaching courses of the several departments be discontinued

and that all special methods work, required for training of teachers, be taught in the department of education as a part of, or closely correlated with, practice teaching.

Rank of Instruction Positions: The rank of instruction employes, including research workers in the agricultural experiment station, was as follows:

Rank	Number	Percent
Professor	41	35.0
Associate professor	19	16.2
Assistant professor	20	17.1
Instructor, or lower	37	31.7
Total	117	100.0

Graduate assistants have not been included in the figures given, though research employes and the librarian hold rank as instruction employes and have been included. There were 51.2 percent in the two highest ranks of instruction positions and 48.8 percent in the two lowest ranks, which is nearly equal. However, there were too many professors and too many instructors and too few associate professors and assistant professors to make a good balance of rank of positions.

Qualifications of Instruction Personnel: The average ages of instruction employes of the various divisions are as follows:

Division	Average Age Of Employes
Division of engineering	48.4
Division of science	42.5
Division of agriculture	38.9
Division of household and industrial arts	37.0
All instruction employes of the college	41.3

The institution has an advantage in having an instruction staff that is relatively young, though there are nine members who have passed the age of 60 years.

Data show that members of the instruction staff are well trained, particularly in the divisions of agriculture and science, in which divisions a large proportion of the members of the staffs hold doctor's degrees with specialization in the fields in which they teach or do research work. Nearly all of the instructors in the division of engineering hold advanced engineering degrees, equivalent to the master's degree. Most of the instructors of the household and industrial arts division hold the master's degree.

A sample of 50 instruction employes had experience as follows:

Type of Experience	Average Years
Teacher in this college	10.7
Teacher in other colleges	2.7
Other educational work	1.3
Other lines of work	1.2
Total	15.9

If these unselected samples are representative of the entire faculty, the average length of experience has been nearly 16 years, nearly 11 years of which have been as teacher in Montana State College. A few of the faculty members have been awarded significant honors, such as election to the presidency of a national professional society, at some time in the past, but the great majority of the faculty members have received little or no significant professional recognition, other than scholarships or fellowships for professional study.

Some of the instructors, particularly in the divisions of agriculture and in some of the departments of the division of science, have made significant contributions to learning in their special fields. A majority of the instruction staff, however, have made little or no contribution to their fields of learning. Some of the instructors are young and probably will make significant contributions in the future. The explanation for the contributions in agriculture and science, and to some extent in home economics, is largely the federal financing of agricultural research. Fields of science, other than agriculture, such as engineering and some of the sciences need encouragement by means of financial support.

Scope of Educational Activities:

Courses Offered and Taught: In 1940-1941, the college offered 931 differently numbered quarter hour courses. If the total number of courses offered is multiplied by about 3, it will be apparent that the college offers a very large number of student credit hours. There were 890 courses taught that year, or 95.6 percent of all courses offered.

Organization of Subject Matter into Courses: A large proportion of the courses, in several departments, are one and two credit hour courses, and many courses in all departments are three credit hour courses or less. Examples of the number of courses of small credit value designed for undergraduate students in this college may be shown as follows:

Department	Credit Hours				
	One or Less	Two	Three	Four	Five or More
Civil engineering	7	13	7	5	2
Economics and sociology	0	0	12	1	0
Mechanical engineering	3	12	7	9	4
English	4	26	20	0	0

A large number of courses of small credit value is especially detrimental to the learning process in college curricula organized on the quarter basis, for quarter courses have only two-thirds of the value of courses of the same number of credit hours organized on the semester basis. The result is that in this college students must take a large number of brief courses, meeting only once or twice a week. Such study must, necessarily, be disconnected and a smattering of learning in a great many subjects results. Such study cannot result in the mastery of subjects that faculty members and students have a right to expect.

With so many small classes, conducted for only three months, the subject matter must be divided into very small course units, with the making of little or no connections among them. In English, it will be noted that 30 of the 50 courses offered are only one or two credit hour courses and the other 20 are only three credit hour courses, all for three months of study, which is the equivalent of two-hour courses, or less, on the semester basis. It is believed that there is not another college in the country that offers so many short courses in English and no courses above three credit hours on a quarter basis, or two semester credit hours.

In all departments of the college, 37.1 percent of the courses carry two or fewer quarter credit hours and 76.5 percent courses carry three or fewer quarter credit hours. Only 23.5 percent are four or more quarter credit hour courses. It would be less serious if the institution were organized on a semester basis, but even then a recommendation for fewer courses of little credit value would be warranted.

It is recommended that a great many of the one-half, one, two, and three credit hour courses be combined into courses of more content and more hours of credit or be discontinued.

Curricula Leading to Graduation: Curricula offered for graduation are the following:

Agriculture (Enrollment 281):
- General agriculture
- Agricultural economics
- Agronomy
- Horticulture
- Animal industry
- Range management
- Dairy production
- Dairy manufacturing
- Agricultural education

Household and Industrial Arts (Enrollment 453):
- Home economics
- Home economics for teachers
- Applied art
- Art teacher training option
- Secretarial studies
- Commercial teacher training option

Engineering (Enrollment 513):
- Mechanical engineering
- Industrial engineering
- Engineering physics
- Electrical engineering
- Chemical engineering
- Civil engineering
- Architecture

Science (Enrollment 479):
- Applied science
- Chemistry
- Industrial chemistry
- Botany
- Bacteriology
- Zoology
- Entomology
- Pre-medical work
- Nursing
- Physical education for men
- Physical education for women

It would seem that 33 curricula are more than should be necessary in a school of fewer than 1,800 students. However, it should be stated that common courses are given in all agriculture curricula for the first two years and that many courses in the last two years are either common to all agriculture curricula or are common to several of the curricula. Also, in engineering, some of the courses are common to two or more curricula, though there is considerably more variation in the course requirements in engineering than in agricultural curricula.

In household and industrial arts the curricula have very commendably been limited to the general curriculum and the teacher training curriculum in each of the subject fields of home economics, secretarial studies, and art. The desirability of offering teacher training in art and commercial subjects may well be questioned in view of the fact that teachers are trained in these subjects at the state university. The practice of offering only one curriculum in general home economics has saved and will save the state considerable expense. There has been some demand by students for specialized work in foods, institutional cookery, clothing and textiles, child care, and other specialized subjects in home economics, but such demands have been resisted by the dean of that division. To specialize in home economics would result in classes of reduced size and in a requirement for additional teachers. Moreover, there is the greatest need in an institution of fewer than 700 women students, some of whom do not study home economics, for general home economics, rather than for training for highly specialized jobs in home economics, of which few exist in Montana.

Graduation Majors: In 1940-1941, students were graduated with majors in the following subjects:

Curriculum	Number
Engineering	76
Agriculture	36
Home economics	28
Secretarial studies	23
Applied science	7
Applied art	7
Physical education	5
Chemistry	4
Botany and bacteriology	4
Pre-medical work	3
Entomology	2
Industrial chemistry	2
Nursing	1
Zoology	1
Total	199

About 70 percent of the graduates majored in engineering, agriculture, and home economics, and about 38 percent majored in engineering.

Service Departments: Departments for which there are no curricula, leading to graduation, outlined in the college catalog, and which may be considered as offering only service courses, are the following:

Agricultural engineering	English
Irrigation and drainage	Modern languages
Veterinary science	History
General engineering	Economics and sociology
Physics	Education and psychology
Mathematics	Military science and tactics
Geology	Music

The number of courses in these departments should be kept as low as possible, consistent with the needs of students who major in other subjects. The number of courses offered in some of these departments, such as English and modern languages might well be reduced.

Graduate Study:

The institution offers work for the master of science degree in six agriculture departments, six engineering departments, five science departments, and one home economics department. It offers the degree of master of applied art in the department of applied art. It does not offer work above the level of the master's degree, leading to the doctorate. The requirements for admission to graduate study and for earning the master's degree are higher and more exacting than are the requirements for this degree in many institutions.

The professional degree in engineering is awarded to graduates of this and other colleges for work of superior quality, extending over a period of three or more years, in positions of responsibility. The passing of an examination is required for this degree, and a thesis that is a contribution to engineering science is required The standards for this thesis are high and many theses are refused as not fulfilling the requirements for the professional engineering degree.

Graduate work in this institution is not as expensive for the state as might be judged. While there were only 49 students enrolled in all of the departments, some of them were merely taking post graduate courses, in regular college work that they had not studied prior to graduation. Moreover, even those students who were candidates for the master's degree studied largely with seniors, and only 31 special classes, restricted to graduate students, were taught. Many of these 31 classes consisted of one or two students, who worked individually under the guidance of a professor and did not meet the professor regularly as a class. Finally, 13 of the graduate students were on graduate or research fellowships, last year, rendering service for one-half or more of the time, at salaries from $400 to $600 a year, which is very economical instruction for the students they teach. Such students devote half of their time to teaching other students or to research and receive their master's degree after two years of study.

The number of graduate students enrolled and the number of graduate degrees conferred, in 1940-1941, were as follows:

Division	1940-1941 Enrollment	1940-1941 Degrees	Enrollment 1941-1942
Agriculture	15	7	22
Engineering	2	-	1
Household and industrial arts	16	-	6
Sciences	16	7	11
Total	49	14	40

Many of the graduate students are not working for a degree and some of those who are working for an advanced degree are fellowship students whose two years in the institution increase the number of graduate students enrolled as compared with the number receiving degrees.

No professional degrees were conferred during 1940-1941.

This year 19 graduate students have been approved for master's degrees, most of them being in agriculture.

Organized Research Other Than Agricultural Research:

Other than in the field of agriculture, and the subject fields related to agriculture, there is no organized faculty research in the institution. The federal Purnell funds are for agricultural research but can be used and are being used to some extent for home economics research, as well, under the administration of the agricultural experiment station. Home economics research should be conducted in the home economics department, to be best carried on, but so long as it is financed from agricultural experiment station funds it seems to be necessary that it be a part of the work of the agricultural experiment station.

The only organized research in science is in chemistry and plant pathology, two fields related to agriculture. Federal funds for the agricultural experiment station are used for this work.

An engineering experiment station has been organized but has no funds for organized faculty research in engineering.

An attempt should be made to secure funds from private sources for research in engineering, in home economics, and in various fields of science that are not necessarily related to agriculture. When the state is financially able to do so, it should make appropriations for research in engineering, home economics, and the sciences, such funds to be expended judiciously and economically, and in ways that are calculated to benefit the people of Montana.

Montana Agricultural Experiment Station:

Legal Provisions: The Hatch act, passed by Congress in 1887, authorized the establishment of agricultural experiment stations in the various states under control of the land-grant colleges which were established in accordance with the provisions of the first Morrill act of 1862. In 1893, the legislative assembly of Montana authorized the establishment of the Montana agricultural experiment station. In 1906, the federal Adams act appropriated additional funds for the support of agricultural experiment stations. In 1929, the federal Purnell act appropriated additional funds for "conducting investigations or making experiments bearing directly on the production, manufacture, preparation, use, distribution, and marketing of agricultural products...and such economic and sociological investigations as have for their purpose the development and improvement of the rural home and rural life, and for printing and disseminating the results of such researches." In 1935, the federal Bankhead-Jones act made additional appropriations available to experiment stations "to conduct research into laws and principles underlying basic problems of agriculture in its broadest aspects....." This included production, distribution, and new uses for "agricultural commodities and by-products" and "conservation, development, and use of land and water resources for agricultural purposes."

Income in 1940-1941 amounted to $235,321.31, derived from the following sources:

Federal funds under four acts of congress	$105,503.16
State appropriations	73,306.08
Sales and other income for direct use	36,959.90
Sales and other income from federal stations restricted to use in such stations	19,552.17
Total	$235,321.31

Expenditures for 1940-1941 amounted to $226,937.51 for operation and repairs.

All research is supported by federal and state funds except a small project on the use of phosphates that is financed privately to the extent of $1,500.

Main Agricultural Experiment Station: The main agricultural experiment station is located in the college and on the college farm near Bozeman. Very complete statements of the work of the various departments are at hand. Most of the departments are doing excellent, and very practical, work in aid of the farmers of the state. Experimental work is directed from the main station and most of it is conducted at the main station. The various departments of research are shown in the organization outline, previously presented. Only very brief statements of a few of the 12 research departments will be presented here.

Some of the principal research, for which there is much demand, is in agricultural economics. The studies cover various phases of farm management, social living, and the like, and even extend to taxation, education, and other matters related more closely to other departments than to those in the division of agriculture.

Agronomy takes the form of studies of crop breeding on irrigated land. The main station has the cooperation of agents of the federal department of agriculture who are breeding cereal grasses and feed grasses. A soil survey is being made throughout the state. Studies are being made of the control of weeds, particularly on abandoned farm land. Marked contributions have been made in research in potato culture.

The livestock work at the main station is integrated with the work at Havre. Calves are moved from Havre to Bozeman, where they are used for both classroom instruction and research study. Experimental stock, as well as livestock owned privately, is used for judging purposes. Sheep are raised on an old military reservation near Bozeman. Dairy research is conducted at Bozeman.

Botany and bacteriology research take the form of the study of sugar beet diseases, the control of wheat smut, and other matters of practical value.

Entomology research is conducted on insects that affect both crops and livestock.

Chemistry is a service department to the animal industry and plant industry group, but studies are made by this department in such matters as the food requirements of plants.

Much work is being done in home economics research, particularly in nutrition, at present, and in methods of food preservation.

Studies in irrigation and the utilization of water resources are under way.

The veterinary research laboratory is linked with the Montana livestock sanitary board. The veterinary department is supported in part from college funds and in part from the funds of the livestock sanitary board.

The library and publications department is responsible for maintaining a research and reference library and for editing all manuscripts of studies to be published.

Branch Agricultural Stations: Several substations are in operation. These are as follows:

Horticultural branch station, Corvallis
Judith Basin branch station, Moccasin
North Montana branch station, Havre
Huntley branch station, Huntley
U. S. range livestock experiment station, Miles City

The Huntley branch station and the U. S. range livestock experiment station are federal stations, supported by the United States department of agriculture, with only $1,200, each, of support from state funds.

The branch stations may be described, briefly, as follows:

Corvallis: 30 acres owned and 10 acres leased. A station, for the study of fruits and vegetables, particularly potato culture and various insect pests. One man superintends the work and laborers are employed.

Havre: 2,000 acres of an old military reservation, owned by Northern Montana College, so it is claimed. 400 additional acres leased for pasture; a school section of 640 acres leased; and 5,520 acres of mountainous Indian land leased for summer range. Research emphasizes (1) dry land agriculture, including tests for crop varieties and (2) beef cattle breeding. There are about 500 head of cattle at this station, of which about 200 head are breeding cows. Two strains of Hereford cattle are bred, which involves the ideas of different stockmen.

Moccasin: Judith Basin branch station. 160 acres, received as a gift from a stockman. 480 acres are leased for experimental uses and another 160 acres are leased, temporarily, for re-grassing. The station is located on a high mountain plateau. The purpose of the station is experimentation in (1) dry land farming and (2) the raising of livestock for utilization purposes. Surplus calves are brought to this station from other stations for grazing the crested wheat grass.

Huntley: A federal station of 350 acres, located near Billings. The purposes are (1) dry land agriculture, (2) irrigated agriculture, including irrigated pastures, and (3) dairying. There is very little state contribution to the support of this station.

Miles City: U. S. range livestock experiment station. About 57,000 acres of old Fort Kiel military reservation, which was turned over to the United States department of agriculture in 1925. It is the only station of its kind in the United States. Montana owns the herds but contributes very little to the operation of the station. The herd of cattle consists of about 1,100 head of beef cattle, of which about 550 head are breeding cows. The value of the state-owned livestock, as of April 30, 1941, was as follows:

Cattle	$ 95,000
Hogs	5,300
Horses	15,500
Total	$115,800

Experiments are conducted in (1) grazing utilization by beef cattle and sheep, (2) hog breeding, (3) water conservation, and (4) effect on grass covering with different intensity of grazing.

There has been some demand for the establishment of additional and further duplicating experiment stations. No more stations are needed. In view of the fact that there is the large federal station at Miles City and the federal station at Huntley, it would seem to be advisable to close the Judith Basin station at Moccasin.

There is some question as to the real ownership of the 2,000 acres of land upon which the North Montana branch agricultural experiment station is located. In the first place, it is believed that a state college or an experiment station can neither of them own land, or at least should not be permitted to do so; the state owns the land. In the second place, the Northern Montana College, which claims to own the land under the law establishing an agricultural school at old Fort Assiniboine, is not the agricultural school established by the legislature for it is neither an agricultural school nor located at Fort Assiniboine. It is located at Havre and is a general college. Still the college claims to own the land and the agricultural experiment station must have permission even for the construction of buildings on that land. The simplest way of making

the matter clear would be for the legislature to pass an act transferring any property rights of Northern Montana College in the land of the old Fort Assiniboine reservation to the Montana agricultural experiment station. The station should have full rights to use the land without any interference from a small college located in a city some miles distance from the old fort.

The Montana agricultural experiment station conducts no temporary stations but does have someone cooperating with certain farmers and ranchers in experimentation with cherry culture, livestock feeding, and the like. The work with livestock is not always satisfactory because farmers are not willing to hold their stock, after they are ready for market, to complete an experiment. However, cooperative experimental work should be encouraged to the extent that it is effective.

Correlation of Research and Instruction: There is good correlation of the work of research in the agricultural experiment station and college instruction in agriculture. Several research men give some lectures and others are employed to devote part time to research and part time to instruction. Class instruction and research are under the same head and the departments in the two divisions are identical, rather than separately organized.

There is not such good correlation between the work of agricultural extension and either agricultural research or class instruction. Extension specialists can contribute much to the program of research by showing the needs for research and they are needed to disseminate the results of research. There should be more interchange of staff between the division of agricultural extension and the agricultural experiment station and between the division of agricultural extension and the college instruction staff.

Correlation with Work in Other States: There is some interstate planning of studies, such as the present nutrition research in several states, the regional sheep breeding studies in four states, and the agronomy experiments in eleven states. The federal department of agriculture approves research projects and refuses to accept them if they are too closely parallel to, or duplicate, research being carried on in other states.

Evaluation of Agricultural Research: It would require considerable time to present an outline of the work of the agricultural experiment station in any considerable detail. A study of the work, however, indicates that it is very valuable and necessary to the welfare of the farms and rural homes of the state. As federal funds for its support have been increased, state funds have been decreased. The experiment station can use, to the advantage of the state, such funds as have been appropriated, though some economy might be effected by the closing of one of the branch stations.

Size of Classes:

Class Enrollment: Data relating to class size were not furnished in accordance with instructions for filling the schedule on this subject. The data were furnished by credit hours instead of by classes. Hence, the data will not be directly comparable with those shown for the other colleges of the state.

The number of credit hours taught in classes of various sizes in the regular session of 1940-1941, was as follows:

Number of Students	Number of Credits in Classes of Each Enrollment Size				
	First Quarter	Second Quarter	Third Quarter	Total Number	Total Percent
2 - 4	100	96	95	291	9.7
5 - 9	125	129	128	382	12.7
10 - 14	132	119	107	358	11.9
15 - 49	524	588	554	1,666	55.6
50 - 74	68	48	69	185	6.2
75 - 99	29	18	18	65	2.2
100 - 149	21	10	8	39	1.3
Above 149	3	4	4	11	0.4
Total	1,002	1,012	983	2,997	100.0

It should be noted that 55.6 percent of the credit hours taught were in classes within the satisfactory class size of 15 to 49 students. However, 34.3 percent were in classes of fewer than 15 students. These do not include classes of one student, such as those in music and graduate students, working as individuals. On the other hand, some classes were larger than is desirable from the standpoint of effective instruction.

Data were not furnished regarding average class enrollment size, in accordance with directions. Hence, the average size of classes is not known and cannot be presented here.

With no more data than have been furnished concerning class size, about the only conclusions that can be drawn are that the large percentage of small classes should be decreased by offering such subjects as result in small classes in alternate years or by discontinuing them entirely. Data were not furnished as to which subjects had small enrollment, in accordance with the request made. However, it is known that subjects that are limited to graduate students had small enrollment. Little can be done to increase their enrollment size since there are so few graduate students. Also, some technical courses, not required in the regular curricula, but offered as electives, had small enrollment. The number of technical courses that are not required in specific curricula should be kept to a minimum and in some departments should be reduced.

Work Loads of Instruction Staff:

Hours of Service per Week: Each member of the instruction staff was requested to state the number of hours he devoted, last year, to each of five instruction duties and each of ten non-instruction duties. The results in hours of work per week may be summarized as follows:

	Hours
Range for all work	22 to 76
Teaching, average	37.6
Other duties, average	11.6
Total time per week, average	49.2

Some of the members of the faculty did not complete the forms and others did not count the time devoted to research as requested in the directions. However, the compilations were made from 87 usable replies and probably represent the average working time of the faculty members fairly accurately, at least so far as the total number of working hours is concerned. Teaching loads were heaviest in the division of science and lightest in the division of agriculture.

Measures of Teaching Load: The number of hours per week, devoted to teaching and other duties, is not the only measure of the work of college instructors. Better measures are the measures of teaching load in terms of equivalent full-time students per instructor, the number of credit hours taught per instructor, and the number of student credit hours taught per instructor. These ratios will be computed in the paragraphs that follow.

Students per Instructor: The number of enrolled students divided by the number of instructors is sometimes used as a measure of teaching load. This figure has some value but should be defined by using the number of equivalent full-time students divided by the number of equivalent full-time faculty members. The number of equivalent full-time students may be computed by dividing the total number of registered student credit hours for the three quarters by the average number of credit hours a full-time student will need to carry in order to complete one of the four years of his college course.

There were 80,949 student credit hours registered for the three quarters of last year. Students study, on the average, about 17 credit hours a quarter, or 51 credit hours a year.

A division of the total number of student credit hours, 80,949, by the number of credit hours allowed for the average full-time student, 51, gives a total of 1,587 equivalent full-time students.

The number of equivalent full-time instructors is computed by considering each instructor as a full-time instructor, unless he is employed as a part-time instructor, or for one quarter only, in

which case he is considered as a fraction of an instructor, or unless he devotes time to some major administrative or supervisory activity, in which case the fraction of his time devoted to teaching is used in the computations. Minor duties, such as all faculty members perform, are disregarded. Computed on this basis, there were 77.7 equivalent full-time instructors in the college in 1940-1941.

A division of the number of equivalent full-time regular session students, 1,587, by the number of equivalent full-time instructors, 77.7, is 20. Hence, in 1940-1941, there were 20 equivalent full-time students per equivalent full-time instructor. This is about the right ratio of equivalent full-time students to equivalent full-time instructors.

Credit Hours per Instructor: The average number of credit hours a semester per instructor is determined by dividing the total number of credit hours taught by all instructors by the total number of equivalent full-time instructors. In 1940-1941, there was an average of 1,118 credit hours taught each quarter. The average number of credit hours taught per equivalent full-time instructor was, therefore, 1,118 divided by 77.7, which is 14.4. An average credit hour teaching load of 14.4 is not too heavy considering the fact that students carry, on the average, a study load of about 17 hours a quarter. The average credit hour teaching load should be about two credit hours less than the average student credit hour study load in a college of this size.

Student Credit Hours per Instructor: Student credit hour registrations, for 1940-1941, averaged 26,983 per quarter. This number, divided by the number of equivalent full-time instructors, 77.7, is 347, which is the average number of student credit hours per equivalent full-time instructor. This average teaching load is about what should be expected, considering the fact that the average student carries a load of about 17 credit hours a quarter.

Average Teaching Loads by Departments: The three measures of teaching load, as applied to the institution as a whole, may be applied to each department of instruction. The results will show which departments have heavy, and which have light, teaching loads, in accordance with the three measures used. The number of equivalent full-time students per equivalent full-time instructor and the number of student credit hours per equivalent full-time instructor will hold a constant ratio for the several departments. In dealing with average teaching loads by departments, consideration should be given to the fact that larger classes can be taught, advantageously, in some subjects than in others.

The average student credit hour load, per equivalent full-time instructor, the average credit hour teaching load on the same basis, and the number of equivalent full-time students per equivalent full-time instructor, by departments, for 1940-1941, may be shown as follows:

Division and Department	Equivalent Full-Time Instructors	Average Quarter Student Credit Hours	Average Quarter Credit Hours	Measures of Teaching Load per Equivalent Full-Time Instructor		
				Student Credit Hours	Credit Hours	Equivalent Full-Time Students
Total education and psychology	1.0	629	18.7	629	18.7	37
Science:						
Chemistry	5.2	3,240	81.7	623	15.7	37
Zoology	2.1	1,095	26.3	521	12.5	31
History	2.0	844	22.0	422	11.0	25
Religion	0.1	42	2.0	420	20.0	25
Mathematics	4.8	1,992	70.7	407	14.7	24
Physics	3.5	1,329	38.3	380	10.9	22
Botany-bacteriology	3.6	1,288	65.7	358	18.3	21
Military science	2.0	706	6.7	353	3.4	21
English	7.9	2,314	104.7	293	13.3	17
Modern languages	3.2	830	47.0	259	14.7	15
Nursing	0.7	178	9.7	254	13.9	15
Physical education	3.5	882	44.0	252	13.8	15
Entomology	0.9	198	27.3	220	30.3	13
Music	2.5	315	39.7	126	15.9	7
Total and average	42.0	15,253	585.8	363	13.9	21
Household and industrial arts:						
Home economics	4.9	1,960	66.5	400	13.6	23
Art	3.0	1,013	46.7	338	15.6	20
Secretarial science	3.0	803	31.7	268	10.6	16
Total and average	10.9	3,776	144.9	346	13.3	20

Division and Department	Equivalent Full-Time Instructors	Average Quarter Student Credit Hours	Average Quarter Credit Hours	Measures of Teaching Load per Equivalent Full-Time Instructor		
				Student Credit Hours	Credit Hours	Equivalent Full-Time Students
Agriculture:						
Agricultural economics	3.0	1,561	59.3	520	19.8	31
Veterinary science	0.5	256	7.3	512	14.6	30
Agronomy	1.2	604	28.0	503	23.3	30
Animal industry	1.9	608	22.3	320	11.7	19
Agricultural engineering	0.8	201	11.3	251	14.1	15
Horticulture	0.8	172	10.7	215	13.4	13
Irrigation and drainage	0.3	58	2.0	193	6.7	11
Dairy industry	1.8	226	21.0	126	11.7	7
Agricultural education	0.8	92	21.7	115	27.1	7
Total and average	11.1	3,778	183.6	340	16.5	20
Engineering:						
General engineering	1.8	717	24.7	398	13.7	23
Industrial engineering	0.9	287	10.7	319	11.9	19
Mechanical engineering	3.2	1,005	44.3	314	13.8	18
Electrical engineering	2.0	564	29.7	282	14.8	17
Architecture	1.5	330	36.0	220	24.0	13
Civil engineering	2.0	426	26.7	213	13.4	13
Chemical engineering	1.3	218	12.3	168	9.5	10
Total and average	12.7	3,547	184.4	279	14.5	16
TOTAL AND AVERAGE, ALL DEPARTMENTS	77.7	26,983	1,117.4	347	14.4	20

The teaching load for the instructor of education and psychology was very heavy. However, this load includes the work of critic teachers in giving the instruction in practice teaching under the direction of the instructor of education and psychology, so that the actual number of student credit hours taught by this instructor would be somewhat less than is shown. Nevertheless, it is believed that an instructor from the division of science should give this instructor some assistance in teaching education or psychology courses. Such an instructor from any department in which teaching loads are, on the average, less than 350 student credit hours, could devote part time to this work, for example, an instructor from the department of English or physical education.

Teaching loads were extremely heavy in chemistry and zoology, in the division of science, and were also rather heavy in mathematics and physics. These departments employed some students to assist in laboratory instruction and the marking of papers, but they needed more professional instructors. This year two instructors have been employed for the chemistry department. Additional assistance for the teaching of chemistry should be secured from the department of chemical engineering, in which the average teaching loads were very light, but that department is so small that only the part time of one instructor could be transferred to the department of chemistry.

It is suggested that one additional instructor of mathematics and physics be employed, most of his time to be given to the teaching of mathematics.

This year an additional instructor was employed to teach botany, though the average teaching load in the department of botany and bacteriology was not extremely heavy last year.

Additional help for the teaching of zoology can be secured from the department of entomology, in which teaching loads are light. These departments have been consolidated into one department this year so that it will be easier to equalize the work between zoology and entomology. Some assistance should also be given in teaching zoology by the instructors of the department of botany and bacteriology, in which the staff will now be larger than necessary.

The number of positions in English, modern languages, physical education, and music, can be decreased by at least two below the equivalent full-time positions in these three departments as of last year.

The teaching loads in the division of agriculture should be more nearly equal. They were especially heavy in agricultural economics and agronomy. They appear to have been heavy in veterinary science, but since only the equivalent of half the time of an instructor was used for teaching that subject, it is likely that the heavy load was due to inaccuracy in estimation of the amount of time the instructor actually devoted to the work. It is recommended that instructors in some of the agriculture departments having light teaching loads assist in the teaching of agricultural economics and

agronomy. This should be possible in view of the fact that an additional instructor was employed in animal industry this year.

The average teaching loads in some of the departments of engineering were light and the total average teaching load in the division of engineering was light. However, there has been some increase of enrollment in engineering this year and engineering is a subject in which some classes must be small.

Teacher Training Program:

The institution trains teachers of home economics (Smith-Hughes), agriculture (Smith-Hughes), physical education, art, music, commercial subjects, history, physiology, physics, chemistry, biology, mathematics, German, French, Spanish, and English, for positions in junior and senior high schools. Students major in agriculture education, home economics education, art, secretarial science, biology, chemistry, and physical education. They are supposed to be prepared for teaching these subjects as principal subjects and the preparation for teaching other subjects is supposed to be secondary to the subjects in which they major. However, they are not prohibited from teaching their secondary subjects without their major subjects.

Students do practice teaching in a high school of about 700 pupils, under the direction of critic teachers who are paid $200 a year by the college, in addition to their regular salaries as paid by the local school district. Last year, 61 students were registered in practice teaching, 21 the first quarter and 20 each of the last two quarters.

It is recommended, first, that other high schools in the state be used for practice teaching and, second, that critic teachers be paid on the basis of the number of practice teachers they instruct and only for such quarters of the year as they have practice teachers. Such a fee need not be more than $25 a practice teacher.

Students receive 6 quarter credit hours for observing, on the average, 1 hour a week or 12 hours for the quarter, and practicing 5 hours a week or 60 hours for the quarter, making 72 hours of observation and practice teaching. Students in agriculture and academic subjects usually devote more than 72 hours to the work and students in home economics and art usually devote less than 72 hours to it.

Summer Session:

No regular summer session for college students is held. Smith-Hughes agricultural teachers of the high schools of the state, and sometimes teachers of trades and industrial arts, come to the campus for short summer courses of a week or two. Any college instructors, who are retained for the teaching of these groups, are paid for the additional work by the state department of education, under whose auspices the conferences are held.

Also, some students make up college work during the summer months. Any instructors who tutor such students are paid the tuition that the students pay to the secretary-treasurer. This practice seems to violate one of the provisions of the code of ethics of the National Education Association, which is that a teacher shall not tutor any of his students for extra pay. However, the method is more economical than would be that of operating a summer session for such students and it is believed that the number of failures of students has not been increased as a means of augmenting income from summer tutoring.

General Extension Service:

The institution conducts no general extension classes and offers no work by correspondence. These omissions are commendable since the state university offers both types of work and there is no need for its duplication.

Agricultural and Home Economics Extension Services:

The Montana agricultural extension service operates under the provisions of the Smith-Lever act, passed by Congress in 1914, and the later Capper-Ketcham act, which have as their purpose the encouragement, with federal financial aid, of non-resident instruction in agriculture, home economics, and related subjects, of farmers, home makers, and the young people of the state. In recent years more and more work has been thrown upon the agricultural and home economics extension services of this agency by the federal government. Not only does the division still have the work of its specialists and its county agents, but its work has been increased and includes the instruction of rural people in the provisions of federal laws relating to soil conservation, reforestation, rural electrification, and the like.

The income of the division for 1940-1941 was $221,645.22, of which $173,797.64 was federal funds received under the federal Smith-Lever and the Capper-Ketcham laws. Expenditures amounted to $221,664.07, of which $220,420.27 was for operation and repairs, and only $1,243.80 was for capital outlays.

The agricultural and home economics extension service is not integrated with the work of research and class instruction in these fields to the extent that the work in research is integrated

with class instruction. Not many of the extension specialists are employed for research or instruction. It has been recommended elsewhere in this report that there be more interchange of personnel between the agricultural and home economics extension service and the other services of the college in these fields of study.

Fifteen specialists are employed in agriculture and home economics extension which, it is stated, serve about 90 percent of about 42,000 farms of the state, or are available for serving them. The specialists work in such fields as livestock breeding, poultry raising, dairying, agronomy, horticulture, land economy, irrigation, clothing, home management, and the like. They definitely attempt to help farmers to increase their income and to improve rural life.

Summaries are given of various activities carried on or encouraged by the specialists, such as in the fields of irrigation, insect control, rodent control, strip farming, marketing activities, the growing of crested wheatgrass, shelterbelt plantings, various kinds of meetings, adult work, 4-H club work, and various kinds of individual contacts by county agents.

Annual reports were submitted by the specialists in livestock breeding, poultry raising, dairying, home economics, soil conservation, rural electrification, irrigation, agronomy, land use planning, and horticulture and farm forestry. These reports were not written according to any set form and reflect the individuality of the specialists who wrote them in their organization and content. Some of the data from two of them may be presented as examples of the type of material some of them contain.

The dairy specialist reported, among other data, the following:

Number of farmers assisted in getting purebred sires	98
Number of farmers assisted in getting grade or purebred females	315
Number of meetings held relative to dairying	423
Number of articles published	123
Number of office calls pertaining to dairying	3,966
Number of boys and girls in 4-H dairy club work	432

In horticulture a landscape project was carried on in 23 counties, farmstead beautification contests were carried on in 3 counties, and yard beautification was conducted in 9 counties. A potato project was carried on in 7 counties. A home vegetable garden project was conducted in 35 counties. A farm forestry project included the starting of 1,292 shelterbelts. For the latter, the forest nursery of the state university furnished 422,371 trees for the plantings.

A total of 41 agricultural agents and 3 assistant agents are employed by 48 of the 56 counties of Montana and 16 home demonstration agents are employed in some of the counties. The work of county agricultural and home demonstration extension agents is supervised by two county agent leaders and one home demonstration agent

leader. Reports of the county and home demonstration agents are summarized in unpublished reports by the leaders.

It is believed that the work of agricultural and home economics extension is not over-expanded in Montana, as compared with other states. Whether or not the work should be curtailed depends upon whether or not the people want all of the service now being rendered. The work is such that an unlimited amount of service could be rendered. However, the more service rendered the greater the cost. It should be said, though, that about four-fifths of the cost of the program comes from federal funds.

As soon as the state can afford the additional expense, or its share of it, it might be advisable to add to the staff an additional specialist in livestock breeding and feeding; and as soon as the state and counties can afford their expense, county agricultural extension agents should be employed for the remaining 8 counties, either with separate agents for each county or in some sort of combination of counties so that one agent can serve two counties in some cases. Also, home demonstration extension agents should be employed for the 40 counties not now being served, either singly or in combinations of counties.

There is a large number of clerical and stenographic employes necessary to keep records and make reports in satisfaction of the requirements of the federal government. The number could be reduced, somewhat, but the reduction would result in very little economy to the state since they are paid largely from federal funds. Also, the regulations of the federal government concerning records and reports must be followed, and clerks' salaries are lower than specialists' salaries.

Library:

The library consists of 60,095 volumes. No record is kept of the number of bound magazines and government documents that help to make the total number of volumes. Last year, 1,989 volumes were added, of which 1,449 volumes were purchased from appropriated funds, 48 volumes were purchased from other funds, and 492 volumes were received as gifts. The state accountant shows that $5,360.33 was expended for library and reference books, as capital outlay, last year. The number of volumes in the library and the number of additions last year were adequate.

The provisions for the storage and use of books are very unsatisfactory. The library is on the second floor of the old administration and classroom building, which was constructed in 1895. This is a very dangerous location for a library because the building is old and the weight of the stacks might cause them to crash through the floor. Furthermore, the building is a fire hazard and a library is too valuable to be housed in such a building. The second floor is not large enough to furnish stack room for all of the books and some of the least used books have been stored in the sub-basement of the engineering building.

Also, because of the lack of space on the second floor of the administration building, six departmental libraries have been established in vacant rooms of other buildings and the experiment station library is housed separately.

Furthermore, the second floor of the administration building is inadequate for the purposes of a library because it will seat only 126 students in both the general reading room and the periodical room. This is about 7 percent of the total number of enrolled students. A library should seat 20 percent of the number of students enrolled in a college.

It is clear that the institution needs a library building. The second floor of the 46-year old structure is unsatisfactory because it is too small to house the books or to seat the students; there is danger in having so much weight on the second floor; there might be considerable loss of books in case of fire; and departmental libraries are not to be recommended from the standpoint of either usefulness or economy.

Student Store:

The student store is located in the new memorial union building. In it are sold books, pencils, fountain pens, various kinds of paper, stationery, notebooks, nevelties, a small line of athletic materials, jewelry, supplies for use in engineering, science, and art classes, and other articles such as ink, glue, erasers, and the like. The principal commodity is textbooks. These are sold both new and second hand. The store makes about 18 percent profit on the sale of books.

The student store is operated as a business of the students, with a board of directors consisting of five members, of whom two faculty members and two students are elected by the student body. The secretary-treasurer of the college is, ex officio, a member. None of the receipts from sales is deposited in the state general fund. The store is operated by a full-time manager, responsible to the board. The manager is assisted by a full-time bookkeeper and twelve part-time student clerks. Salaries are paid from the proceeds of operation of the store. The store pays for express and drayage and for tele phone service. It pays rent for a heated and lighted room to the memorial union building account.

The accounts of the student store are audited by an independent auditor. It is stated that the enterprise is self-supporting and that last year it turned over a small profit to the memorial union building fund.

Student Welfare Activities:

Student Guidance and Counseling: Student guidance and counseling activities are scattered among various departments and divisions. Certain activities are carried on by the director of the testing bureau, who is also a professor of agricultural education. This bureau gives aptitude, interest, and personality tests. According to the announcement in the college catalog, "Special counseling is done to assist the student in planning his training program." Last year, this bureau furnished testing and counseling services to 120 students. Testing is done by the director, who devotes about 30 percent of his time to the work of the testing bureau. It requires more than five hours for each student since the tests are individual and the director prepares individual reports on test results, case histories, and analyses of cases for class advisers.

The four deans of divisions serve as registration officers and class advisers to students registered in their respective divisions, and are required to devote much time to student conferences with freshmen and others to assist them in making adjustments to college life.

The registrar operates a placement service for teachers; the dean of the school of engineering operates a placement service for engineers; and several other members of the staff devote time to the placement of the graduates of the institution.

The dean of women has charge of the discipline of women students, has charge of the living conditions of women students in the dormitories and in city homes, and provides for the employment of women students. She has charge of, and provides for, the supervision of social functions.

The dean of men has charge of the discipline of men students, is a member of the student loan committee, and has some control over fraternities, but no provision is made for supervision of the housing of men students.

Even the supervision of student employment is scattered among various individuals as will be shown in the discussion of student employment, and there is no coordination among the provisions for financing of students who need help through employment, scholarships, or loan funds. Student loans, student college employment, NYA employment, and the placement of graduates are closely related and they are all related to guidance activities in helping students to solve their vocational, educational, financial, social, health, and other problems.

The student personnel activities should be centralized in a division of personnel, as was previously recommended, and a principal function of that division should be student guidance and counseling.

Health and Medical Service: A compulsory health service fee of $3 a quarter, or $9 for the full regular session, is charged each student. The total collections for the hospital fund, last year, amounted to $13,297.61. Health and medical service cost $12,964.19. The fund had accumulated a balance of $3,288.49 on June 30, 1941. Two nurses, a technician, and a secretary are employed. The nurse, designated as director, is paid from state appropriations. The other three employes, one of whom is a part-time employe, are paid from the hospital fund.

Hospital and medical expenses, except in case of chronic illness, are paid for students from the hospital fund. No college physician is employed, but students select their own physicians from those of the city. Hospital and medical services are charged to the college at the rate of 80 percent of regular services.

Various medical tests are given and various immunization and preventive measures are taken. These consist of the Dick test, the Schick test, the Mantoux test, the Wassermann test, diphtheria toxoid, cold vaccine, Rocky Mountain spotted fever vaccine, scarlet fever vaccine, blood counts, hemoglobins, cultures, smears, urinalyses, infra-red treatments, ultra-violet treatments, diathermy treatments, and chest and emergency radiographs.

Last year 496 students were given physical examinations at entrance to college, 4,229 treatments were given for minor ailments, ten major and three minor operations were furnished students, and 52 students were hospitalized for varying lengths of time. Very complete health records of each student are kept.

Residence Halls and Dining Halls: The college operates two dormitories for women, one with a capacity of 60 students and the other with a capacity of 120 students. No dormitories are operated for men students and more than 1,000 men must find rooming facilities in the relatively small city of Bozeman or live in fraternities and the fraternities furnish facilities for less than 25 percent of the men students. The charges for rooms range from $30 to $45 a quarter.

Some of the students live in cooperative houses, where board and room is furnished by the students and where students participate in the maintenance of the house and in the buying and preparation of food.

Dining halls are operated in each dormitory and dormitory students are charged $23 a month for board. A restaurant is operated in the memorial student union building. Last year, the operation of the entire building, including the restaurant, showed a loss. This year, each student is paying a service charge of $3.50, which should make the union building self-sustaining. The administration of food service in the two dormitories is directly in charge of members of the staff of the home economics department and that department also exercises some direction over the food service of the memorial student union building.

Separate accounts are kept for each dormitory and for the dining hall of each dormitory. Dormitory and dining hall accounts are charged for heat, light, repairs, telephone service, and the time of employes devoted to their supervision, and for domestic and janitorial employes' salaries. No charge is made to these accounts for the services of the bookkeeper nor for the services rendered by the business office in collecting the dormitory rentals from students. Charges should be made for these services, for one bookkeeper devotes most of her time to the keeping of dormitory accounts.

Hamilton Hall is an old building that is badly in need of repair. The Quadrangle is a group of new buildings, which was built with a bond issue in 1936. There was a deficit on the operation of Hamilton Hall during the depression years, when rents were lowered and the charges for board were reduced. Now, surpluses are being accumulated in the dormitory accounts.

The two dormitory rooming accounts and the two dormitory boarding accounts showed total income of $52,263.89 in 1940-1941. Expenditures for operation and repairs amounted to $41,215.83, and capital outlay was $1,955.60, or a total expenditure of $43,171.43.

The balances on June 30, 1941 were $10,810.85 in the Hamilton Hall fund and $7,131.59 in the Quadrangle fund. The balance in the former account can be used, if necessary, to pay the interest and to go into the sinking fund for the redemption of bonds on the Quadrangle. It would seem to be unnecessary to use the balance of the Hamilton Hall fund for the payment of bonds on the Quadrangle, and it is suggested that it be used to repair Hamilton Hall.

Student Employment: A professor has charge of student employment on the grounds; another professor has charge of student employment in the college buildings; a dean has charge of student employment under the NYA; the employment of athletes on the grounds, in the buildings, and in the gymnasium is in charge of the department of physical education; the student union employs student independently; and the farm employs the students it needs. There is no check to determine whether or not a student is filling several jobs in addition to the carrying of his college work, nor as to the need of the student for employment. The administration of student employment should be centralized and it should be in the proposed division of student personnel.

Scholarships: The scholarships issued by the executive secretary of the University of Montana, from Helena, to all institutions of the university, include exemption of freshmen from the payment of matriculation and other fees, amounting to $50 for the freshman year. They are awarded only to freshmen of high scholastic standing. Scholarships of $100 are also awarded to outstanding winners in high school week scholarship contests. In 1940-1941, the college had 81 high school honor scholarship students, and three high school week scholarship students.

Advanced scholarships are awarded to students in classes above freshman grade, to not more than 5 percent of such students. The same rule applies in all of the colleges. In 1940-1941, advanced scholarships, to include exemption from the payment of fees, amounting to a value of $45 were awarded to 50 advanced students.

Seven other scholarships, three of which were agricultural club scholarships and four of which were endowment scholarships, were awarded.

Six graduate fellowships, with stipends from $150 to $600 a year, and an average stipend of $438.61, were awarded by the college and four graduate fellowships, paying $450 each, were awarded by the agricultural experiment station. This is a method of employment of graduate students to assist in the instruction of undergraduate classes and each fellowship student earns the money paid him.

The greatest need is for the administration of the scholarship program by the person who should be designated to administer the student work program. It is not suggested that scholarships should be awarded on the basis of need for financial assistance instead of on the basis of scholastic accomplishments, as at present, but scholarships and student employment are both related to the program of student counseling.

Loan Funds: Loan funds should be administered by the person who administers the programs of student employment and scholarships. These are all related to the solution of the financial problems of students and, thus, their administration should be a part of the program of student guidance and counseling. The administration of loan funds, as well as of student employment and scholarships, belongs in the proposed division of student personnel. This, of course, would not apply to the loan funds administered by the executive secretary for all units of the university, but even the loan funds should be administered in accordance with the local program and to students whom, it is known, need financial assistance.

Sponsored Student Activities:

The institution conducts a program of intramural sports, which is carried on in close conjunction with intercollegiate athletics, to the extent that it is financed, in part, by the income from intercollegiate athletics and is conducted by members of the faculty in the department of physical education, as is, also, the athletic program. Last year, 450 men and 200 women participated in intramural sports, aside from athletics and required physical education courses. The program consists of many of the more common sports, in season, and is well organized to attract the interest of students. Heavy study programs and student work programs interfere with the enrollment to some extent. There should be more than 650

participants in a college of more than 1,700 students. Time should be found for intramural sports even if the academic program must be curtailed, somewhat, to provide the time. Elsewhere it was shown that students were required to take far too many courses of small credit value each year. This is probably the reason that fewer than half of the students find time for intramural sports.

The institution participates in intercollegiate athletics in the following activities: football, basketball, track and field events, wrestling, boxing, swimming, and winter sports. It has a very good gymnasium and swimming pool. Athletics is under the control of an athletic board, consisting of faculty, student, and alumni members. Athletes are furnished employment to help with their expenses and, during the last two years, money has been borrowed by the student's association to pay their college fees.

A statement of the intercollegiate athletics account, for 1940-1941, showed receipts of $24,839.06 and expenditures of $24,018.98. The expenditures do not include the salaries for the proportion of time that coaches devoted to the training of intercollegiate athletic teams, but do include $701.98 for intramural sports and $59.30 for women's athletics. Separate accounts should be kept for intercollegiate athletics and intramural sports, for intramural sports may reasonably be considered as a part of the expenses of education of students. Intramural sports might be included in the cost of physical education. The account for intercollegiate athletics, on the other hand, should include a part of the salaries of coaches based upon the proportion of time they devote to coaching intercollegiate teams. The intercollegiate athletics program should be entirely self-supporting, even if reduction of the program is necessary to place it on a self-supporting basis.

Most of the financing of intercollegiate athletics, $13,588.07, in 1940-1941, was from student fees. This is a heavy burden to place upon the finances of students. Only $9,116.20 was derived from admission and game guarantee receipts. It may be estimated that the state finances intercollegiate athletics by the employment of coaches and other help to the extent of at least $5,000.

Very good programs are provided in dramatics, various kinds of forensics, and college assemblies, and these will not be discussed. Also, an especially good modern form of student government is in operation which, in some respects, may be considered as a model for student government. Many clubs exist and social life is fairly well organized. There are two bands, an orchestra, a chorus, glee clubs, and other music organizations. A weekly paper and a college annual furnish a few students opportunity for participation in writing and publishing. None but favorable comment can be made concerning these activities.

Physical Plant:

Value: The inventory value of the plant, as of October 31, 1941, was stated to be as follows:

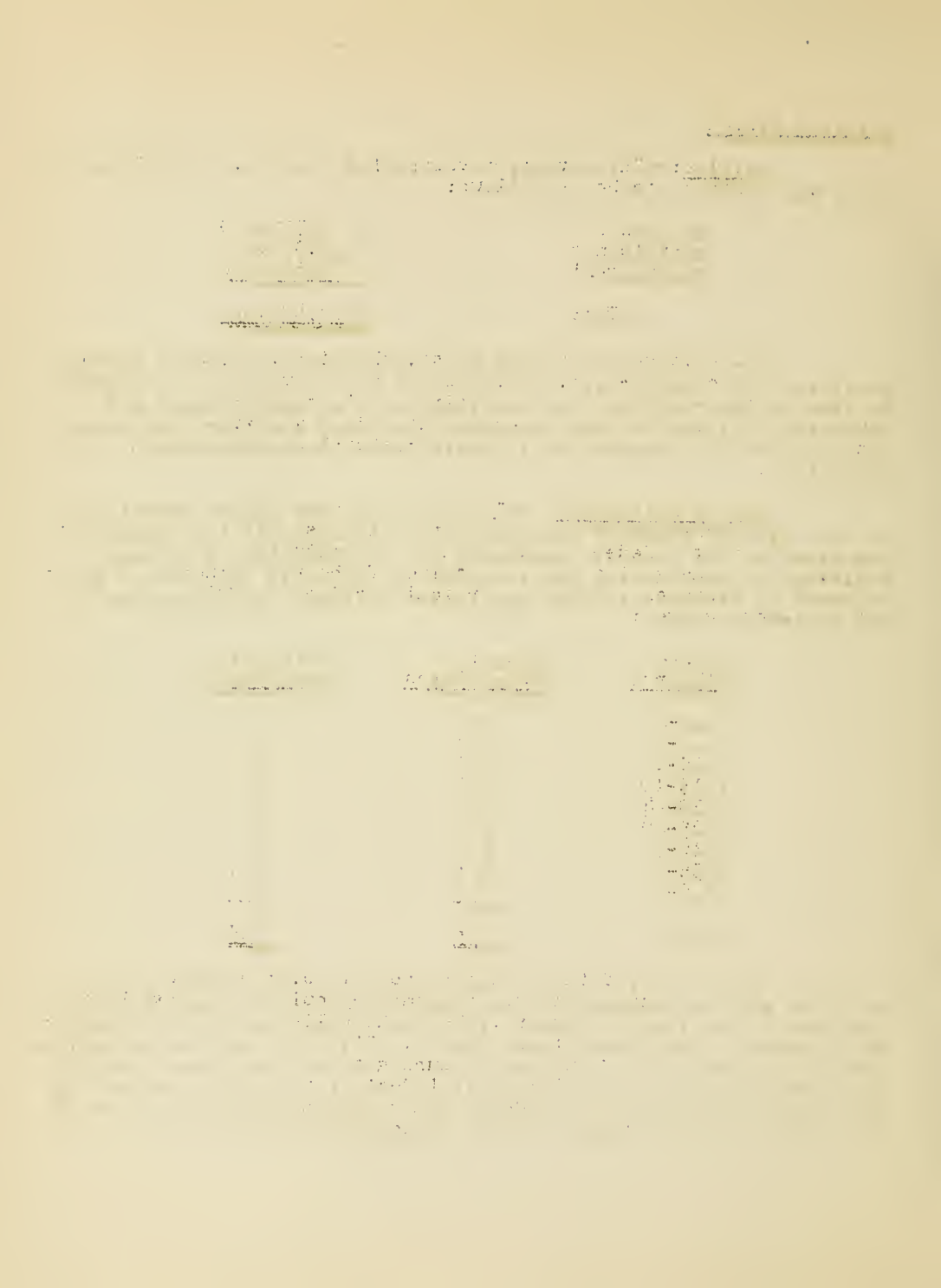
Grounds	$ 314,000
Buildings	1,977,000
Equipment	600,000
Total	$2,891,000

The value of the plant was, therefore, $1,629 per student enrolled as of 1940-1941. This is not a high valuation per student in view of the fact that the institution is an agricultural and mechanical college and much equipment and many auxiliary buildings are required for instruction in agricultural and engineering subjects.

Age of Buildings: There have been few recent additions to the physical plant of the institution in spite of the recent aid furnished by the federal government for construction of college buildings in many states and in spite of the rapid increase of enrollment of students in this particular college. Buildings are of the following ages:

Age (Years)	Minor Structures	Principal Structures
0-4	0	1
5-9	1	1
10-14	3	0
15-19	7	5
20-24	2	1
25-29	2	1
30-34	4	2
35-39	5	0
40-44	2	2
Total	26	13

Only two of the principal buildings, the student union building and the quadrangles, or dormitory buildings, have been constructed in the last 14 years. Yet, the college has had considerable growth of enrollment since 1928. It is true that the prospects are for a decrease of enrollment during the next few years, but it is doubtful whether enrollment will decline to a point at which the present plant will be adequate and, anyway, there is need for much repair and remodeling work in the existing structures.



Adequacy of Plant: To discuss the adequacy and inadequacy of the plant would require many pages. Only a hasty survey of the adequacy of the plant will be given here.

The campus, proper, consists of 90 acres of land. There are adjoining farms comprising 365 acres, making a total of 455 acres in the body of land upon which the college, proper, is situated. The amount of land in the various substations of the agricultural experiment station has been stated elsewhere in this report. The campus and grounds are adequate for the needs of the institution.

The main hall is used as an administration, classroom, auditorium, and library building. It is 42 years old and is very inadequate for the purposes for which it is used. In this building is located what is probably the poorest college classroom in the United States. It is a center corridor in the basement, closed at both ends, without windows or any other source of light than electricity. Until lights are turned on, it is pitch dark in the room at midday. The room is poorly ventilated, also. The building is inadequate for any purpose for which it is used.

Construction of the chemistry building was started at the time of the first world war and it was not completed. There has been no increase in building area for chemistry though the number of students has increased from 350 to 1,775 and the subject is studied by a great many of the students. The attic, above the third floor, has been furnished with seats for classes of 250 students. This attic classroom had but one exit until recently. An outside exit and fire escape have been installed at a cost of $2,500 to provide for the safety of the many occupants of the room.

The agricultural building is 34 years old and is too small for the work conducted in it. It is used for classrooms, research offices, and laboratories, and is very crowded. Recently, a group came to the college for a short course, and could find no place to meet except in the corridor.

Lewis Hall is a classroom, laboratory, and office building that was erected 19 years ago. It is too small for the number of classes held in it but, otherwise, is adequate. Herrick Hall is used for classes in home economics and art. It was constructed 15 years ago and is one of the newest and best buildings on the campus. It is not large enough for all of the home economics and art work, however, and some home economics classes are held in other buildings. The two cooking rooms are too small for large classes.

The engineering building and the engineering shops are 19 years old. The engineering building is a large three-story building above a basement and is adequate for its purposes but the engineering shops are too small. The agricultural engineering building is 22 years old. It is adequate as to size but not as to state of repair.

The gymnasium and swimming pool are 19 years old and are fully adequate for their purposes. The athletic field is furnished only with open bleachers. However, the small crowds at football games will not warrant the building of more expensive seating accommodations.

The student union building is a very beautiful new brick structure, and the quadrangles serve their purposes very well. Secretarial classes are held in the union building, in spite of the fact that it is not an academic building and that it is really a student building not only because of the fact that it was constructed for student use, but the students are paying for it.

The remainder of the 39 structures, that constitute the college, vary from being fully adequate to being very inadequate for various reasons. Most of the farm buildings are adequate.

Building Requirements: The legislative assembly, in 1941, passed an act (Chapter 119) authorizing a referendum for a bond issue of $690,000 "for the construction, repair, remodeling and equipping of necessary buildings at Montana State College, at Bozeman." This question will be submitted to the voters for ratification by referendum at the general election, November, 1942. The measure would provide for the issuance of state bonds, to be secured by an ad valorem tax of ½ mill on all property of the state that is subject to taxation, and to be issued in the form of serial bonds that would run not to exceed 20 years and would draw not to exceed 4 percent interest.

Just what will be the building program, in case the referendum measure passes, has not been determined, definitely. The president of the institution and the college architect place the needs in the following order:

President:
- Chemistry building addition
- Library building
- Mathematics-physics building
- Wool and dairy building

Architect:

Library building	$292,000
New boiler and piping	50,000
Engineering laboratory	119,000
Service shop	31,000
Chemistry building, addition and remodeling	226,000
Total	$718,000

The needs are so great that it is difficult to determine just what buildings should be constructed. However, it must be considered that it will be unnecessary to construct buildings for all departments for which a need can be shown. This is so because the construction of a building releases building space in old buildings for use and also because there are prospects for decreasing enrollment in the years to come. After due consideration of the needs of the institution, the following is proposed as the best plan for the use of $690,000, which will be available if the referendum measure is passed. The amounts suggested are based upon price levels that have existed in recent years. Any rise in prices of materials or labor would make an increase in the estimates necessary. The list is given in order of what is deemed to be of greatest importance to the operation of this institution.

Repair and remodeling of old buildings	$120,000
New library building	200,000
Additional boiler and piping	40,000
Chemistry building addition, and some built-in and movable equipment	100,000
Agricultural building addition and some equipment	110,000
Engineering laboratory addition and replacement of old model engineering equipment	100,000
Service shop	20,000
Total	$690,000

The moving of the library from the main hall would release the third floor of that building for remodeling into classrooms, and would release rooms now occupied by departmental libraries.

It is unfortunate that the buildings have been constructed so far apart, for that increases the cost for piping for heating and for keeping pipes in repair, and increases the loss of heat in transmission from the heating plant to the buildings. Additional buildings will require an additional boiler.

The chemistry building and the agricultural building both need additions to serve the number of students enrolled in chemistry and agriculture and the agricultural experiment station staff. These additions should include necessary built-in equipment and some additional movable equipment.

New, up-to-date engineering equipment is necessary for the engineering laboratory. Such equipment will be expensive. The laboratory needs to be enlarged and repaired.

A very adequate service shop can be constructed for $20,000.

About $120,000 should be used for the remodeling of the main hall, the engineering laboratory, the mathematics building, and other buildings.

In view of the probability that enrollment will decline, it might be well to reduce expenditures for buildings below the $690,000 proposed in the referendum measure. A plan for the expenditure of $400,000 of the amount would be as follows:

Repair and remodeling of old buildings	$ 80,000
New library building	180,000
Additional boiler and piping	35,000
Chemistry building addition (for use of chemistry and agriculture)	100,000
Reconstruction of frame service shop	5,000
Total	$400,000

It is probable that a plant, improved by the addition of $400,000 would serve the purposes of the institution for a decade or more, unless, for some unforeseen reason, there should be an increase of enrollment above 1,800 students during that period.

If it is impossible to secure building materials or labor for the construction of college buildings in 1943 and 1944, when the proposed $690,000 from the bond issue would be available for building purposes, in case the measure is approved by the electorate, it is suggested that the present structures be repaired, if possible, and that those that are unsafe be strengthened. In case the bond issue is not passed, an appropriation should be passed for the purpose of reconditioning and strengthening the structures that need it.

In the discussion, no provision has been made for a mathematics-physics building. It is assumed that the mathematics building would be repaired. Physics could be moved out of the basement of the main hall to the second floor of the building. No provision was made for a dairy industries building. With the construction of an addition to the agricultural building, there would be room for that work in that building. No provision was made for a men's dormitory. Such a building is needed but should not be constructed from the $690,000 bond issue. No provision was made for an athletic grandstand. With small attendance at athletic contests, such a building is not needed. No provision has been made for a military science and tactics building. Such a building is badly needed, but it is less essential than are those buildings listed as being urgently needed.

Need for Repairs: Aside from any larger remodeling and repair program, there is great need for ordinary repair and upkeep of buildings. In recent years little has been expended for the maintenance of the physical plant and much work needs to be done to protect the buildings from further deterioration.

The main hall, named Montana Hall, needs a new roof and cornice. The college architect estimates that the cost would be $5,010 for the room and $1,000 for the repair of the cornice and gutters.

The chemistry building is resting on some columns in the basement that need reinforcing. It is estimated that the cost would be about $2,500. Also, there is need for an exhaust ventilating system.

The exterior woodwork of Lewis Hall needs painting and a walk needs to be constructed from Lewis Hall to the street. The greenhouse needs a new frame. New floors are needed in the agricultural building.

The agricultural engineering building and the military science and tactics building need new roofs. Both buildings need inside and outside repair and painting. The military science and tactics building needs repair of ceiling, installation of a toilet room, and heaters in the drill room and the arms room.

While most of the farm buildings are in good condition, there is need for repairs on the granary, the dairy barn, the horse barn, and the machine shed. A new roof is needed for the home management house. The outside and inside woodwork of several of the buildings need painting. The total requirements for urgent repairs of present buildings, other than the dormitory, without a program of construction or remodeling, may be estimated at about $25,000.

Hamilton Hall is a women's dormitory, built in 1910, at a cost of $45,000. Its construction was faulty and the corridor walls have settled as much as three inches. The doors do not fit. The electric wiring is defective. If repaired, it would have to be replastered. The roof needs repair and the building needs to be redecorated. It has been recommended, elsewhere, that the surplus in the Hamilton Hall fund be used for this purpose.

Equipment: Much of the equipment in engineering is 30 or more years old. New equipment is needed for proper instruction in this subject. Also, science equipment is inadequate. Microscopes, for example, are needed for teaching biology. Students have to carry microscopes up and down stairs from one classroom to another.

At certain hours, several classes need the microscopes at the same time and much time is wasted in waiting for their use. In other cases, laboratory work has to be postponed because of lack of microscopes and that makes it impossible to correlate laboratory and class study properly. Other science equipment is also needed. The greatest need is for physics equipment. Some agriculture equipment is also needed.

While a large amount of equipment is needed, in many of the departments, it is believed that $25,000, expended judiciously for equipment, much of it for engineering equipment, would greatly improve the instruction equipment of the institution.

Fire Protection: Reduction of fire hazards should be accomplished as follows:

Some of the buildings have not been properly wired for electricity. Electric wiring should be in conduit, not exposed electric cords.

The storage of cleaning materials, such as oils and oiled cloths should be provided for, not under stairs nor in any place where air does not circulate, or where there is combustible materials, but in steel cans or open rooms.

Measures needed for safety of occupants of buildings are the following:

Fire escapes should be installed for all buildings more than one story in height.

Panic bolts should be installed on all doors leading to the outside and doors leading to fire escapes.

Measures needed for extinguishing fires are the following:

Chemical fire extinguishers should be placed on every floor and in handy places for use in case of fire.

Hoses should be tested and those that are in a weakened condition should be replaced.

Operation and Maintenance: The supervising architect, who is also a professor of architecture, is in charge of all operation and maintenance work of the physical plant. Under him are a superintendent of the service shop, a superintendent of the heating plant, and a custodian. All plant employes, except the ashman, are employed for 12 months. In the summer months, firemen make repairs to radiators and other parts of the heating system.

The boilers of the central heating plant are operated with pressure of 180 pounds. Slack coal is used for fuel except in buildings away from the main campus, where gas is used.

Mastic floors are waxed. Wood floors are left untreated. Some of the better maple floors ought to be better preserved. There is only one rotary floor machine and that is in the new union building. Another floor machine is needed and these should be used in various buildings.

Floors are cleaned daily. Mastic floors are mopped with water and wood floors are dusted with a dry mop. Glass is cleaned two times on the outside and oftener on the inside, but some of the inside of window glass was very dirty at the time of inspection. Deodorants are used in some of the toilet rooms. This practice should be discontinued. Marks are left on the walls of some of the toilet rooms. These should be removed. Some toilet room floors had been muddy and had a coat of dried mud on them. Some toilet fixtures were extremely dirty and appeared not to have been cleaned for a long time. The furniture and woodwork of some of the classrooms needed refinishing.

Ventilation in the chemistry building is very bad. The plenum system is unsuitable for a chemistry building. An exhaust system should be installed. This is an urgent need because the heavy chemistry fumes are injurious to the health of students.

Receipts and Expenditures:

Income: The income of Montana State College, for 1940-1941, was as follows:

Fees, sales, and nurse's revolving fund	$144,438.34
Dormitory board and room rentals	52,263.89
Federal Morrill-Nelson income	76,574.53
State appropriation - salaries and expenses	176,818.71
State appropriation - student railroad refund	11.04
Interest and income	16,681.91
Morrill interest and income	28,761.95
Walsh endowment	200.48
Total	$495,750.85

Some of these items are not public expendable income, such as the $52,263.89 for dormitory board and room and the college building fees, amounting to $20,980, included in the item for fees and sales.

The income of the Montana agricultural experiment station, for 1940-1941, was as follows:

Fees, sales, and other collections	$ 36,959.90
Federal funds	105,503.16
Appropriations for main and substations and the grain laboratory	73,306.08
U. S. Range and Huntley stations, local fund	19,552.17
Total	$235,321.31

The income of the Montana extension service, for 1940-1941, was as follows:

Miscellaneous	$ 3,197.41
Smith-Lever fund	150,497.99
Capper-Ketcham fund	23,299.65
State appropriation	44,650.17
Total	$221,645.22

Expenditures: The expenditures of Montana State College, for 1940-1941, were as follows:

Operation:	
General administration	$ 35,254.41
Educational system	289,990.68
Physical plant	65,933.90
Repairs:	
General administration	177.62
Educational system	1,958.38
Physical plant	7,229.16
Dormitories:	
Operation and repairs	41,215.83
Total	$441,759.98

Capital outlays amounted to $83,077.98.

The expenditures for the Montana agricultural experiment station, for 1940-1941, were as follows:

Operation:

General administration	$ 11,113.49
Experiment station	146,449.53
Physical plant	7,556.19
Substations	55,823.77

Repairs:

General administration	27.16
Experiment station	2,198.29
Substations	3,769.08
Total	$226,937.51

Capital outlays amounted to $11,144.53.

The expenditures for the Montana extension service, for 1940-1941, were as follows:

Operation:

General administration	$ 10,404.07
Extension service	207,713.99
Physical plant	1,800.00

Repairs and replacements:

General administration	5.77
Extension service	496.44
Total	$220,420.27

Capital outlays amounted to $1,243.80.

Value and Cost of the Services:

Total expenditures for Montana State College, for operation and repairs, under administration, the educational system, and the physical plant, in 1940-1941, amounted to $400,544.15. This does not include expenditures for the dormitories, for the agricultural experiment station, nor for the agricultural extension service. Expenditures for operation of the college amounted to $391,178.99 and for repairs, to $9,365.16.

Total enrollment, in 1940-1941, was 1,775 students. Equivalent full-time enrollment, according to the method previously used for computing enrollment on a full-time basis, was 1,587.

Using these two sets of figures, unit costs may be computed as follows:

Total cost per student enrolled	$225.65
Operation cost per student enrolled	220.38
Total cost per equivalent full-time student	252.39
Operation cost per equivalent full-time student	246.49

The last figure, $246.49, as the cost of operation per equivalent full-time student, is probably the most significant unit cost figure. It has been computed with the omission of capital outlays and expenditures for repairs and replacements. Also, it has been compiled for the number of full-time equivalent students, and this credits part-time students and students attending for only one or two quarters with the proportion of time they actually devote to college study.

Expenditures for operation, that are strictly for the departments, omitting all administration expenses, plant operation expenses, and other operation expenses that are not chargeable to any one department, may be divided by the number of equivalent full-time students in the departments to determine the cost per equivalent full-time student in the several departments. The results are as shown on the following page.

The unit cost for nurse's training was very high. However, the work is supported entirely by fees paid into a revolving fund. Also, the total amount of work taken by students of nursing has not been used as the divisor, in determining the unit cost for nursing education, for the work of nurses is taken largely in the hospitals and that part of their work has been omitted from the figures used in determining unit cost, so that the figure is not the true unit cost for this work.

The unit cost for dairy industry instruction was very high, but nearly one-third of this was for supplies and expenses and some of the expense for salaries was for other than instruction salaries. Also, there is considerable offsetting income from this department.

The unit cost for instruction in animal industry was very high, but more than one-third of the expenditures for this subject were for supplies and expenses and there was expenditure for salaries other than instruction salaries. Also, there is offsetting income from the operation of this department.

The unit cost for agricultural education was very high. This should be reduced.

The unit cost for chemistry instruction, of $120.62 per equivalent full-time student, was very low, particularly in view of the fact that more than one-third of the expenditures were for supplies and expenses.

Department	Number of Equivalent Full-Time Students	Expenditures for Operation	Cost per Equivalent Full-Time Student
Nursing education	10.5	$15,750.91	$1,500.09
Dairy industry	13.3	15,661.19	1,177.53
Agricultural education	5.6	4,369.55	780.28
Animal industry	35.6	20,398.64	572.94
Chemical engineering	12.8	4,610.04	360.16
Physical education	51.9	16,398.90	315.97
Horticulture	10.1	3,094.47	306.38
Irrigation and drainage	3.4	1,039.58	305.76
Entomology	11.6	3,213.73	277.05
Civil engineering	25.1	6,284.79	250.39
Music	18.5	4,366.82	236.04
Architecture	19.4	4,444.05	229.07
Industrial engineering	16.9	3,635.77	219.13
Electrical engineering	33.2	6,836.48	205.92
Agricultural engineering	11.8	2,220.84	188.21
Botany and bacteriology	75.8	10,944.65	144.39
Modern languages	48.8	6,971.06	142.85
Veterinary science	15.1	2,106.91	139.53
English	136.1	18,496.39	135.17
Secretarial studies	47.2	6,369.17	134.94
Education and psychology	37.0	4,900.82	132.45
Physics	78.2	10,280.20	131.46
Mechanical engineering	59.1	7,735.18	130.88
General engineering	42.2	5,479.81	129.85
Chemistry	190.6	22,996.81	120.62
Art	59.6	6,702.68	112.46
Agricultural economics	91.8	10,324.31	112.46
Agronomy	35.5	3,954.10	111.38
Mathematics	117.2	12,860.10	109.73
Home economics	115.3	12,637.94	109.60
History	49.6	4,974.10	100.28
Zoology	64.4	6,302.02	97.86
Military science	41.5	323.22	7.79
Religion	2.5	-	-

The unit cost for zoology was also very low, at $97.86. This is a laboratory science. The cost may have been reduced to a figure below what is warranted for effective results.

The unit cost of military science was low because the college contributes very little to the work, other than for protection of the arms. Professors of military science and tactics are employed directly by the federal government.

There was no cost for the few credits given in religion. The work is furnished free.

Summary of Recommendations:

On the basis of the data presented and the conclusions reached in this report of a study of Montana State College, it is recommended:

Recommendations Not Requiring Legislative Action:

(1) That the number of technical courses, not required in specific curricula, be kept low and be reduced in some of the departments of instruction.

(2) That the number of courses offered in some of the service departments be reduced.

(3) That courses, having very small enrollment, be either discontinued or taught only in alternate years, as means of increasing class size.

(4) That many of the courses of from one half to three credit hours (on the quarter credit basis) be combined into courses of greater content, with more hours of credit, or be discontinued and be replaced by courses covering a greater body of related subject matter.

(5) That there be more interchange of specialists in the division of agricultural extension with professors in the agricultural experiment station and the division of agriculture of the college.

(6) That efforts be made to secure grants from industries and other private sources for research in engineering and in various sciences that is not, necessarily, research related to agriculture.

(7) That no additional permanent agricultural substations be established and that when it becomes necessary, in the future, to make studies at other places in the state than where substations are now located, a temporary station be established and be discontinued as soon as the specific problem has been solved, or else that the problem be studied by cooperative arrangements with farmers.

(8) That the department of education and psychology be placed in one of the divisions of the college, preferably in the division of science.

(9) That a division of student personnel be formed, with a dean of students at its head, to have direction of, and to carry on, student welfare activities, such as testing, guidance, student financial aid, student discipline, supervision of housing, health and medical service, recreation, and the like.

(10) That, if a dean of students is appointed, the titles of the positions of dean of men and dean of women be changed to counselor of men and counselor of women and that they work under the direction of the proposed dean of students.

(11) That the dean of men, or counselor of men, devote full time to the guidance and welfare of men students.

(12) That the expense of the recommended position of dean of students and the additional part time of the dean, or counselor, of men be covered by the saving of expenses for the time of academic deans and professors now devoted to personnel work.

(13) That there be better balance of rank assigned to instruction employes.

(14) That those instructors who have very light teaching loads be assigned additional classes from related departments in which the instructors have very heavy teaching loads and from unrelated departments having heavy teaching loads in case they are qualified to teach the subjects.

(15) That some of the time of instructors of entomology be devoted to assisting instructors of zoology and that the department of botany and bacteriology also furnish the part time of one instructor for the teaching of zoology.

(16) That instructors in some of the agricultural departments, in which average teaching loads are light, devote part time to the teaching of classes in agricultural economics and agronomy, in which departments average teaching loads are heavy.

(17) That the staff of the department of chemical engineering give some assistance in the teaching of chemistry.

(18) That an additional instructor of mathematics and physics be employed.

(19) That the number of instruction positions in the combined subjects of English, modern languages, music, and physical education be reduced by at least two.

(20) That an instructor from some department in the division of science, in which teaching loads are light, such as in the department of English or modern languages, devote part time to the teaching of courses in education and psychology, in which department the teaching load is very heavy.

(21) That the special methods of teaching courses of the several departments be discontinued and that all special methods work, needed for the training of teachers, be taught in the department of education as a part of, or closely correlated with, practice teaching.

(22) That practice teaching be carried on, under the direction of carefully selected critic teachers, in schools located anywhere in the state, where excellent teachers are located.

(23) That critic teachers be paid at a fixed rate per practice teacher such as $25 each, for the specific quarters of the year they have practice teachers to instruct.

(24) That charges be made to dormitory accounts for the cost of accounting and collecting services furnished by the business office.

(25) That more students be encouraged to participate in the intramural sports program.

(26) That the expenditures for intramural sports be included in the expenditures for physical education; that the expenditures for intercollegiate athletics be kept in a separate account; and that the proportion of time that physical education instructors devote to coaching be charged to intercollegiate athletics.

(27) That intercollegiate athletics be conducted on a fully self-supporting basis, when all expenses are included in the account, even if it should be necessary to reduce the program to make athletics self-supporting.

(28) That the student health and medical service staff be placed in the proposed division of student personnel.

(29) That the guidance and counseling function be centered in and be the principal function of the proposed division of student personnel and that the dean of that division direct the work of the division and any other guidance functions that are required of the instruction divisions.

(30) That the administration of all forms of student employment at the college and in the town, of the awarding of scholarships, and of the student loan funds of the college, be centralized in the proposed division of student personnel and be administered as a unified program and in close relation to the guidance and counseling program.

(31) That, if the $690,000 bond issue should be approved by the people in November, 1942, the order of building improvement and construction be repair and remodeling of old buildings, the construction of a library building, the enlargement of the heating plant, the construction of a chemistry building addition, the construction of an agricultural building addition, the construction of an engineering laboratory addition and the replacement of old model engineering equipment, and the construction of a service shop.

(32) That, in view of probable decline of enrollment, the expenditure for repair, remodeling, and construction of buildings, be reduced to $400,000, even if the $690,000 bond issue for buildings is approved by the electorate.

(33) That, as soon as the state can afford the outlay, a library building be constructed, whether or not the bond issue is approved.

(34) That repairs be made to the main hall, the chemistry building, Lewis Hall, the agricultural engineering building, the agricultural building, and other buildings of the college where need is greatest.

(35) That the plenum ventilating system of the chemistry building be replaced with an exhaust system.

(36) That Hamilton Hall, a women's dormitory, be repaired and that the cost of repairs be paid from the accumulated balance in the Hamilton Hall dormitory fund.

(37) That a limited amount of equipment for instruction in engineering, science, and agriculture be purchased.

(38) That measures be taken for the reduction of fire hazards, for the safety of occupants of buildings, and for the extinguishing of fires, in accordance with suggestions made in the body of this report.

(39) That another floor machine be purchased for the waxing and polishing of floors.

(40) That windows be kept cleaner, toilet room fixtures and floors be kept cleaner, marks be removed from toilet room walls, and the use of deodorants in toilet rooms be discontinued.

(41) That furniture and woodwork be refinished in buildings where the need exists.

Recommendations Requiring Legislative Action:

(42) That, when the state is financially able to do so, it make appropriations for research in engineering, home economics, and the sciences.

(43) That the legislative assembly consider the advisability of closing the Judith Basin branch agricultural experiment station, located at Moccasin.

(44) That the legislative assembly, at the next session, pass an act transferring any property rights of Northern Montana College in the land now used by the North Montana branch agricultural station from that college to the agricultural experiment station.

(45) That, when the state can afford the expense of expanding its agricultural extension program, an additional specialist in livestock breeding and feeding be added and that as soon as the counties and the state can afford to do so, county agricultural and home demonstration agents be employed for the counties not now being served, either separately for the counties or in combinations of counties.

STATE OF MONTANA

GOVERNOR'S COMMITTEE ON REORGANIZATION

AND ECONOMY

MONTANA STATE UNIVERSITY

(Report No. 55)

January 14, 1942

Prepared by

Griffenhagen & Associates

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REPORT ON

MONTANA STATE UNIVERSITY

Introduction:

The University of Montana (now Montana State University) was established by the legislative assembly in 1893. The law specified that the site of the institution should be within three miles of the city of Missoula. The institution was opened in 1895. In 1899 the university was moved to the permanent buildings that had been constructed on a site of 41 acres, donated to the state, and lying within the present city limits of Missoula.

In 1911, the legislature "created and established" the law school as a department of the university. In 1913 the legislative assembly "created and established" a forestry school as a department of the state university. Other schools and departments were established before and after these dates by the state board of education.

While the institution was at first named the University of Montana, that title was later applied to all of the state institutions of higher education and the following law was enacted:

> "The state educational institution located at Missoula and heretofore designated as the university of Montana shall hereafter be known and designated as the state university and shall constitute one of the component institutions of the University of Montana."

Another section of the law provides that the legal name of the institution is "Montana State University."

Extent of Services Rendered:

Location: Montana State University is located at Missoula, a city of 18,449 population, according to the 1940 census. Missoula is in the mountains in the western part of the state, but is accessible by railroad and highway. No other institution of higher education is located near Missoula. The other units of the University of Montana offer some work that is similar to that given by the state university, though the kind and amount of duplication varies with the different institutions. However, most of the state colleges are located at a considerable distance from the state university.

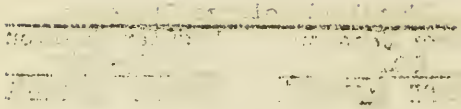
Territory Served: The extent to which Montana State University serves a local or widespread area of the state, for college instruction, may be indicated by showing the distances from Missoula of the homes of those students who were enrolled at the institution for the summer session of 1940 and the regular session of 1939-1940. The distances of the homes of students from the institution were as follows:

Distances of Homes of Students from the University	Enrolled College Students			
	Summer Session 1940		Regular Session 1939-1940	
	Number	Percent	Number	Percent
Within 10 miles	154	18.0	562	25.6
From 10 to 50 miles	21	2.5	54	2.5
From 50 to 100 miles	119	14.0	469	21.3
More than 100 miles	559	65.5	1,111	50.6
Total	853	100.0	2,196	100.0

It will be noted that a large proportion of the students come from long distances. More than half of the regular session students lived more than 100 miles from the institution and 71.9 percent lived more than 50 miles away.

Non-Resident Students: The institution has a great many non-resident students in both regular and summer sessions. This is one of the reasons that the proportion of students from a distance of more than 100 miles is so large. The number of out-of-state students, in 1940-1941, was as shown by the table on the following page.

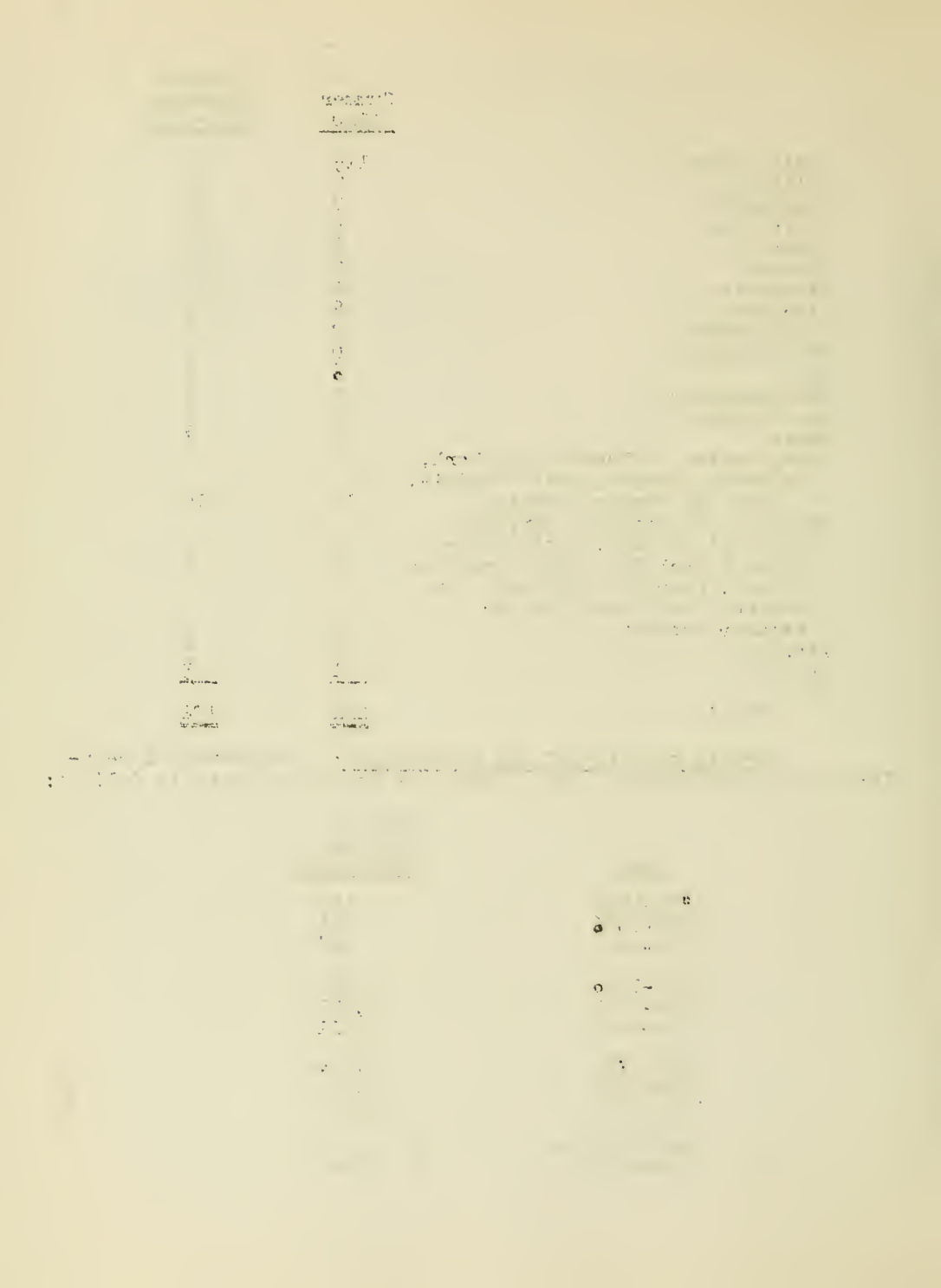
Of 2,196 students listed for the school year, 1939-1940, a total of 192 lived out of the state. This is 8.7 percent of the total number of enrolled students. In the summer session 28.6 percent were from other states or countries. A special non-residence fee of $75 a year is charged to out-of-state students for the regular session, and no non-resident fee is charged for the summer session. However, the fee of $75 to non-residents, together with the regular fees, will not pay the cost of education of a student for a year. Students from various states help to improve the work of a university in any state, and it is probable that out-of-state students attending Montana State University are offset by Montana students attending universities in other states.



	Summer 1940	Regular Session 1939-1940
North Dakota	115	27
Illinois	7	23
Washington	7	22
California	6	19
Idaho	8	15
Wyoming	2	11
Minnesota	30	10
Wisconsin	8	9
South Dakota	17	8
Pennsylvania	0	7
Ohio	6	5
Massachusetts	0	4
New Jersey	1	3
Texas	2	3
Iowa, Kansas, Nebraska, New York, Oklahoma, Oregon, West Virginia, 2 each for regular session	15	14
Arizona, Connecticut, Maryland, Missouri, Nevada, North Carolina, 1 each for regular session	6	6
Colorado, Florida, Michigan, New Mexico, Utah, None for the regular session	12	0
Alaska	1	3
Canada	1	3
Total	244	192

Growth and Size of the Institution: The growth of regular session enrollment, over a period of years, has been as follows:

Year	Regular Session Enrollment
1895-1896	135
1905-1906	243
1915-1916	658
1925-1926	1,510
1930-1931	1,575
1933-1934	1,611
1936-1937	2,256
1939-1940	2,196
1940-1941	2,036
1941-1942, to November 1	1,508



Enrollment reached a peak in 1936-1937, when 2,256 students were enrolled in the regular session. Enrollment has been declining for the last five years and, this year, there will be a loss, probably, of more than 20 percent of the number of students enrolled in 1936-1937. The 1,508 students enrolled as of November 1, 1941, may be compared with 1,865 students enrolled on November 1, last year. There may be no more students in the institution, after the final student has registered than there were in 1930-1931 or in 1933-1934.

In addition to the 1,508 students enrolled as of November, 1941, there were 655 students enrolled in the summer session in 1941, 294 in correspondence classes, and 39 in extension classes, but each of these had fewer students than a few years ago.

Functions:

The statutes provide that "The state university has for its object instruction of young men and women on equal terms in all the departments of science, in literature, the arts and industrial and professional education." It is further provided that:

> "The college or department of literature, science, and the arts shall embrace courses of instruction in mathematical, physical and natural sciences, with their application to the industrial arts; a liberal course of instruction in the languages, literature, history, and philosophy, and such other branches as the state board of education may prescribe. And, as soon as the income of the university will allow, and in such order as the demands of the public may seem to require, the said courses of instruction in the sciences, literature, and the arts shall be expanded into distinct colleges or departments of the university, each with its own faculty and appropriate title."

The statutes provide that there shall be (1) a preparatory department (later provision is made for its discontinuance), (2) a department of literature, science, and the arts, and (3) such professional and technical colleges as may, from time to time, be added thereto or connected therewith.

The statutes provide that "All able-bodied male students of the university may receive instruction and discipline in military tactics."

The purposes of the institution and of its instructional organization units have not been formulated, recently. The only school, division, or department that publishes its objectives, with the announcements of its courses, in the college catalog, is the school of education, and its objectives were formulated many years ago and are not adequately expressed.

The other instruction units should all formulate their several sets of objectives, briefly, but very specifically. These should be published, at least for the schools, divisions, and principal departments, in the college catalog, as a means of informing students as to what changes the organization units aim to make in them. Every member of the instruction staff should have a mimeographed copy of the objectives, as they are cooperatively formulated, for his school, division, and department, for ready reference in his office. Without formulated objectives, departments in a school, or professors in a department, are very likely to be working at cross purposes, with a reduction in the effectiveness of the work as a whole.

Academic and Professional Recognition:

Montana State University is accredited by the following agencies:

Association of American Universities. This association, composed of 33 leading graduate schools, accredits other universities for graduate instruction. Montana State University is not a member of the association but is on a list of 258 colleges and universities approved by the association for graduate study.

Northwest Association of Secondary and Higher Schools. This association accredits 56 colleges and universities in seven mountain and Pacific states and Alaska. The dean of the school of education of Montana State University is chairman of the commission on higher education of this association.

American Council on Education. Montana State University is a member of this council, but the council is not an accrediting association.

American Bar Association. This association accredits 102 law schools, including the school of law of Montana State University.

American Association of Colleges of Pharmacy. This association accredits 54 colleges or schools of pharmacy. The list includes the school of pharmacy of Montana State University.

American Association of Schools and Departments of Journalism. This association accredits 32 member schools, among which is the school of journalism of Montana State University.

National Association of Schools of Music. This association accredits 103 schools of music that are members of the association. The school of music of Montana State University has held membership and has been accredited since 1939.

Society of American Foresters. This society accredited 20 schools in 1940, among which was the school of forestry of Montana State University.

General Control:

Montana State University is a unit of the University of Montana and, as such, is under the general control and supervision of the state board of education.

The law provides for the appointment of a local executive board. This board meets to discuss the problems of the university but seems to have no function to fulfill. It consists of the president of the institution and two lay members. The business manager acts as secretary of the local executive board.

Admission of Students:

Students are recruited by various means, such as the holding of track meets for high school students, educational conferences, the furnishing of commencement speakers for high schools from among the members of the university faculty, the mailing of summer school bulletins and other announcements to prospective students, and by other means.

Last year, the following classes of students were admitted:

Entering from high schools	468
Entering from colleges, with advanced standing	180
Entering as non-high school graduates, but 21 years of age	2
Total	650

Last year, at the close of the first quarter, 18 freshmen were eliminated because of poor grades and 74 others voluntarily withdrew for various reasons.

The requirements for general admission are the same as for admission to the other units of the University of Montana and are satisfactory in every respect.

Students, admitted to advanced standing must meet the entrance requirements for freshmen. Students may be admitted to advanced standing from any unit of the University of Montana, without loss of credit and from any other college or university accredited by the North Central Association or the Northwest Association. The other requirements for admission with advanced standing appear to be satisfactory.

No special admission requirements are made for admission to the college of arts and sciences, in which most of the students are enrolled and which must give them such advanced work as is required for admission to other schools of the institution.

The school of forestry and the school of journalism have no additional requirements for admission to those of general admission to the university.

Students are admitted to the school of business administration and the school of education only after they have completed two years of approved college work and are ready to begin work in the junior year of college study, though students are admitted to classes in both of these schools below the junior year.

In addition to the regular entrance requirements, special requirements are made for entrance to courses leading to the degree of bachelor of music in applied music, for the study of voice, piano, violin, organ, and wind instruments. However, students of any age, and with or without academic preparation, are permitted to enroll in advanced music subjects, but no credit is allowed unless they meet the general university requirements for admission.

The school of pharmacy requires that the student must have completed 40 credits of prescribed college work for admission. This is less than full sophomore standing.

The school of law requires that students shall have completed 90 credits of work acceptable for the bachelor's degree, exclusive of non-theory courses in military science, domestic arts, physical education, and courses of similar character. This is, approximately, equivalent to the completion of two years of college study. An average grade standing of C is required for admission. While admission to the school of law requires but two years of college study, three years, and the completion of the social science curriculum, are recommended to students desiring admission.

Classification of Students:

The total enrollment of the institution, for the regular session of 1940-1941, was distributed among the several classification groups as follows:

Classes	Enrollment	Percent
Special and unclassified	104	5.1
Freshman	531	26.1
Sophomore	465	22.8
Junior	367	18.0
Senior	477	23.5
Graduate	92	4.5
Total	2,036	100.0

Summer session students are not classified, but most of them were registered in the upper college and graduate years. More than 25 percent were graduate students.

It will be noted that 54 percent of the students enrolled in the regular session were enrolled in the first two years of college or were special students, leaving 46 percent in the two upper college and the graduate years.

Only four of the special and unclassified students were registered in any school. They consisted of the following:

College of arts and sciences	4
Civil aeronautics administration	21
Music	23
Shorthand and typing	31
Unclassified	25
Total	104

There were losses of students in the sophomore and junior years. In the senior year there was an increase of more than 100 students. This is a reflection of the transfer of students from other colleges for the last year of undergraduate instruction at the university to fulfill the requirement of one year of residence work for graduation from the state university.

Organization and Staff:

Outline of Organization: The internal organization of Montana State University, as of October 1, 1941, showing the increased salaries being paid this year, was as follows:

Title of Position	Number of Positions	Months Employed	Annual Salary
Acting president (also dean of the school of law)	1	12	$5,230
President's secretary	1	12	2,300
File clerk and stenographer	1	12	1,620
Stenographer (part time - 35 cents an hour)			
(Dean, school of law - also acting president)			
Law librarian and secretary	1	12	1,600
Student assistant librarian (part time)	1		
Acting dean (also professor)	1	9	3,500
Professor	1	9	3,200
Associate professor	1	9	2,800
Assistant professor	1	9	2,550
Assistant professor (part time)	1	9	600
Assistant professor (part time)	1	9	300
Dean, school of education	1	9	3,60[illegible]
Professor	1	9	3,100
Professor	1	9	2,000
Dean, school of pharmacy	1	9	3,30[illegible]
Professor	1	9	2,55[illegible]
Assistant professor	1	9	2,300
Dean, school of forestry (also director, Montana forest and conservation experiment station)	1	11	4,000
Secretary and librarian	1	12	1,500
Professor and director, forestry school nursery	1	11	3,300
Nurseryman and instructor	1	11	1,600
Laborer (various rates of pay)	4		

Title of Position	Number of Positions	Months Employed	Annual Salary
Dean, school of forestery (Cont'd)			
Professor	1	9	$3,100
Professor	1	9	3,060
Associate professor	1	9	2,850
Assistant professor	1	9	2,000
Student assistant (part time - hourly rate 35 and 40 cents)	7	11	
Dean, school of business administration	1	9	3,600
Professor	1	9	2,900
Assistant professor	1	9	2,150
Instructor	1	9	1,500
Dean, school of journalism (part time)	1	9	2,000
Secretary and librarian	1	12	1,320
Assistant professor	1	9	2,300
Instructor	1	9	2,000
Instructor and press foreman	1	9	2,400
Machinist operator (seasonal - union scale)	1	9	
Press foreman and janitor (5 hours a day at $1.13 for 8 months and 3 hours a day at 50 cents for 11 months)	1	11	
Instructor	1	9	1,90
Publicity assistant	1	12	96
Dean, school of music	1	9	3,10
Secretary	1	12	1,02
Professor	1	9	2,45
Professor (part time)	1	9	600
Associate professor	1	9	1,900
Associate professor (part time)	1	9	500
Assistant professor	1	9	2,600
Assistant professor	1	9	2,100
Instructor	1	9	1,950
Instructor	1	9	1,800
Dean of faculty (also dean of the college of arts and sciences and professor of chemistry)	1	9	4,300
Chairman, classical language department	1	9	3,450
Instructor	1	9	1,800

Title of Position	Number of Positions	Months Employed	Annual Salary
Chairman, modern language department	1	9	$3,250
Professor	1	9	2,950
Professor	1	9	2,550
Associate professor (also chairmain, student union executive committee)	1	9	2,450
Manager, student union	1	9	1,500
Night clerk and technician (part time)	1	9	405
Night clerk (part time)	1	9	360
Custodian (also responsible to university custodian)	1	9	1,620
Assistant custodian (part time)	1	9	360
Assistant professor	1	9	2,100
Assistant professor	1	9	1,800
Chairman, department of English	1	9	3,600
Professor	1	9	3,150
Professor	1	9	2,925
Associate professor	1	9	2,600
Assistant professor	1	9	2,200
Assistant professor	1	9	2,15[illegible]
Instructor	1	9	2,00[illegible]
Instructor	1	9	1,90[illegible]
Instructor (part time)	1	9	50[illegible]
Dean of men (also chairman, social science division)	1	9	4,14[illegible]
Dean's secretary (also responsible to dean of faculty and dean of women)	1	12	1,500
Associate professor	1	9	2,600
Assistant professor	1	9	2,250
Instructor	1	9	2,000
Chairman, department of economics and sociology	1	9	3,500
Associate professor	1	9	2,700
Assistant professor	1	9	2,540
Assistant professor	1	9	2,350

Title of Position	Number of Positions	Months Employed	Annual Salary
Professor of psychology	1	9	$2,950
Assistant professor and director of extension	1	9	2,200
Secretary	1	9	1,320
Instructor	1	9	1,900
Chairman, zoology department and director of biological station	1	9	2,700
Assistant professor	1	9	2,400
Instructor	1	9	2,000
Caretaker	1	12	300
Student assistant (part time - rate 35 and 40 cents per hour)	3		
Chairman, bacteriology and hygiene department	1	9	2,900
Student assistant (part time - 35 cents per hour)	1		
Chairman, botany department	1	9	3,600
Associate professor	1	9	2,500
Assistant professor	1	9	2,200
Instructor	1	9	2,100
Student assistant (part time - rate 35 and 40 cents per hour)	4		
(Professor of chemistry - also dean of the faculty and dean of the college of arts and sciences)			
Professor	1	9	3,46[illegible]
Professor	1	9	3,25[illegible]
Chemistry storekeeper (also inventory and requisition clerk - responsible to the business manager)	1	12	1,920
Student assistant (part time - rate 35 and 40 cents per hour)	14		
Chairman, physics department (also director of placement bureau and the summer session)	1	9	3,740
Secretary (placement bureau and summer session)	1	12	1,320
Student assistant (part time - 35 and 40 cents per hour - number varies)			
Assistant professor	1	9	2,300

Title of Position	Number of Positions	Months Employed	Annual Salary
Chairman, mathematics department	1	9	$3,600
Professor	1	9	3,600
Associate professor	1	9	2,700
Assistant professor	1	9	2,100
Chairman, geology department	1	9	3,600
Professor of geology	1	9	3,200
Chairman, physical education department	1	9	3,600
Associate professor (also responsible to director of athletics)	1	9	2,750
Assistant professor	1	9	2,100
Assistant professor	1	9	2,000
Student assistant (part time - rate 40 cents an hour)	7		
Head football coach	1	9	4,200
Assistant professor	1	9	2,650
Athletic trainer	1	9	1,380
Chairman, fine arts department	1	9	2,700
Chairman, home economics department	1	9	3,100
Professor	1	9	2,850
Assistant professor	1	11	2,400
Instructor	1	11	2,000
Head nursery school teacher	1		
Librarian	1	11	2,800
Assistant librarian	1	11	2,350
Student assistant (part time - rate varies)	19		
Reference librarian	1	11	2,050
Documents and serials librarian	1	11	1,850
Assistant	1	11	1,380
Cataloger and instructor	1	11	1,500
Acquisitions librarian	1	11	1,380
Dean of women	1	11	2,700

Title of Position	Number of Positions	Months Employed	Annual Salary
Director, health service	1	12	$3,900
Secretary and technician	1	11	1,200
Assistant university physician	1	12	2,600
Nurse	1	12	1,200
Registrar and business manager	1	12	3,780
Assistant registrar	1	12	2,100
Recording clerk	1	12	1,620
Correspondence clerk	1	12	1,320
Counter clerk (student, part time - rate 45 cents per hour)	1		
Statistical clerk (student, part time - rate 50 cents an hour)	1		
Transcript and file clerk (student, part time - rate 35 cents an hour)	1		
Assistant to registrar (vacant)	1	12	1,800
University auditor and assistant business manager	1	12	3,500
Bookkeeper	1	12	1,500
Cashier and assistant bookkeeper	1	12	1,20
Bookkeeper	1	12	1,02
Assistant bookkeeper and stenographer	1	12	1,02
Cashier and stenographer	1	12	1,20
Fee clerk and stenographer	1	12	1,20
Assistant requisition clerk	1	12	1,20
Director of office service	1	12	1,620
Stenographer	1	12	1,020
Mimeograph operator (part time - vacant - 35 and 40 cents an hour)	3		
Chief telephone operator (student, part time - rate 40 cents an hour)	1		
Assistant operator (student, part time - rate 3 cents an hour)	1		
Timekeeper and secretary NYA (student, part time)	1	9	450

Title of Position	Number of Positions	Months Employed	Annual Salary
Maintenance engineer (also assistant professor of forest engineering)	1	12	$3,000
Stenographer and clerk (part time)	1	12	890
Assistant to maintenance engineer (student, part time - rate 45 cents an hour)	1		
Repairman	1	12	2,400
Assistant repairman	1	12	2,100
Foreman, carpenter shop	1	12	2,400
Carpenter	1	12	2,100
Chief engineer	1	12	2,400
Engineer and fireman	3	12	2,050
Helper (part time)	1	12	360
Engineer and fireman, night watchman, gardener (also responsible to maintenance engineer and custodian)	1	12	1,828
Custodian	1	12	2,200
Janitor	6	12	1,400
Janitor	1	12	1,200
Janitor	1	12	990
Janitor	1	12	910
Janitor (part time - on leave of absence)	1	12	700
Student janitor (part time - rate 30 cents an hour)	1		
Gardener	3	12	1,560
Gardener and watchman	1	12	900
Truck driver	1	12	1,680
Night watchman	2	12	1,700
Director of residence halls (also professor of home economics)	1	12	3,200
Secretary and bookkeeper	1	12	1,800
Student office assistant (part time - rate 40 cents per hour)	1		

Title of Position	Number of Positions	Months Employed	Annual Salary
Director of residence halls (Cont'd)			
Assistant director of residence halls and director of North Hall and New Hall	1	12	$1,500
Cooks and kitchen employes (from $420 to $900, and full maintenance)	5	12	
Student kitchen assistant (part time)	4	9	225 3m
Housemaid ($600 and $720 and full maintenance)	2	12	
Janitor	1	12	1,400
Janitor	1	12	1,448
Social director (North Hall and New Hall)	1	10	850 M
Student assistant (part time)	8	9	225
Hall director, South Hall	1	10	850 M
Cooks and kitchen employes (from $420 to $900 and full maintenance)	4	12	
Student kitchen assistant (part time)	5	9	225 3m
Student dining room assistant (part time)	9	9	225 3m
Student manager (part time) (South Hall)	1	10	725
Assistant student manager (part time)	1	9	363
Student proctor (part time)	4	9	360
Social director (South Hall)	1	10	900 M
Student assistant (part time - rate from $14 to $25 a month - number varies)			
Hall director, Corbin Hall	1	10	1,000
Cooks and kitchen employes (from $360 to $900, and full maintenance)	4	12	
Student assistant (part time)	13	9	225 3m
Housemaid	1	12	600 M
Student manager, Corbin Hall (part time)	1	9	550
Assistant student manager (part time)	1	9	363
Student proctor (part time)	3	9	360

M - Full maintenance
3m - Three meals

Evaluation of the General Form of Organization: Recently, a president has been appointed for the university and the former acting president has retained his other position of dean of the school of law. He has also been made vice president of the institution, a position that would be useful only in case the position of president suddenly were to become vacated.

The various professional schools are organized in logical form, with a dean at the head of each school.

The various departments of the college of arts and sciences are headed, as a rule, by chairmen of the departments. The chairmen and professors at the head of departments are not responsible to the dean of the college of arts and sciences, as they should be, but are responsible directly to the president of the institution.

The college catalog outlines a very effective four division form of organization for the college of arts and sciences, consisting of the following:

Division of humanities
Division of social sciences
Division of biological sciences
Division of physical sciences

These divisions, and even the college of arts and sciences, itself, are not recognized in the lines of responsibility, of positions, that exist, as will be noted in the organization outline, previously presented. Each division has a chairman, but the positions are not recognized in the organization of the staff and no one is responsible to these chairmen. The chairmen of divisions have no authority and appear to exist in name only. Thus, the line of responsibility is shunted around both the dean of the college of arts and sciences and the chairmen of the four divisions, and the chairmen of departments are responsible directly to the president of the university.

The real organization is an exceedingly defective form. It makes 34 persons, 31 of whom are heads of organization units, responsible, directly, to the president of the institution. There are too many principal persons responsible to the chief executive officer to make for effectiveness of organization. No president can effectively direct so many principal heads. The form of organization may result in each head doing his work without direction, and in lack of coordination of the work of the institution or in a feeling of neglect, and resulting dissention, because of clashes in policy.

Another defect exists in that the various deans of schools are not responsible to the dean of the faculty. If a position of dean of the faculty is to exist, the incumbent should have some authority over the faculties of the several schools. The deans of the schools, and through them, their faculties, should be responsible to the dean of the faculty.

The form of organization, as it has been planned, and as it is presented in the college catalog, is excellent. The plan of organization as it exists needs to be corrected as follows:

The position of dean of the faculty should be discontinued.

The number of heads of organization units, responsible directly to the president, should be greatly reduced, so that the president can serve as the coordinating officer of fewer and larger units, and so that a dean of the faculty will not be needed.

The chairmen of divisions of the college of arts and sciences should be designated as directors of divisions, to distinguish them from chairmen of departments, and should actively direct the work of the departments, through their respective chairmen.

The directors of the four divisions of the college of arts and sciences should be responsible to the dean of the college of arts and sciences.

One of the most striking defects in the form of organization of the institution, as a whole, appears to be that the student welfare activities are scattered through many different organization units.

It is proposed that a dean of student personnel be appointed to coordinate the several activities relating to student welfare. Under this dean would be included such functions as the following:

Guidance and counseling - educational, vocational, financial, social, emotional, etc.

Direction of freshman orientation.

Administration of the testing program.

Administration of student aid, such as scholarships, loan funds, and student employment.

Discipline of students.

Supervision of religious activities, such as the YMCA.

Supervision of student housing in dormitories and in homes in the city.

Direction of student recreation, including intramural sports, music, art, and the like.

Direction of student social activities and events.

Direction of health and medical service for students.

Direction of student activities and the student union.

Management of placement services for graduates of all colleges and schools of the university.

Administration of high school meets at the university.

Administration of student personnel records.

The work should require no more employes than are now employed. No new duties are added by this proposal. It is merely proposed to consolidate various matters related to student personnel into one division. This would require merely the rearrangement of work schedules. It would permit more efficient performance of personnel duties and would avoid duplication and the lack of knowledge of what other officers are doing. Work would be consolidated under one head that is now performed by widely scattered members of the staff, including the various academic deans, an associate professor of modern languages, the dean of men, the dean of women, the chairman of the physics department, the director of health service, the director of residence halls, the hall directors, the social directors of residence halls, and several others.

Organization of Instruction: The organization of instruction has been excellently presented in the catalog as has been previously mentioned, but, it has been shown that it is not operative as it has been planned. The plan, slightly modified for logical presentation, by the omission of curricula that have been included with organization units, may be presented as follows:

School of law
School of education
School of forestry
School of journalism
School of pharmacy
School of business administration
School of music

College of arts and sciences

Division of humanities

Classical languages
Latin
Greek

Modern languages
French
Spanish
German

College of arts and sciences (Cont'd)

Division of humanities (Cont'd)

English and speech
Composition, language, and literature
Speech and dramatics

Library economy
Fine arts

Division of social sciences

Economics and sociology
Economics
Sociology
Anthropology

History and political science

Division of biological sciences
Botany
Zoology
Bacteriology and hygiene
Physical education
Psychology and philosophy

Division of physical sciences
Mathematics
Physics
Chemistry
Geology
Home economics

Department of military science and tactics
Affiliated school of religion
Graduate school
Public service division (extension)

It would be difficult to make any major improvements in this plan. It is suggested that the department of military science and tactics be placed, along with physical education, in the division of biological science of the school of arts and sciences.

The principal recommendation is that the plan of organization, as outlined, be made effective, as suggested under a previous heading. This should be done completely and in spite of the fact that some of the chairmen of departments are strong men. The divisions, rather than the departments of the college of arts and sciences should be the principal organization units. The departments should be minor units. In order that they be made minor organization units, it would probably be advisable to discontinue the positions of chairmen of departments.

Rank of Instruction Staff: The rank of instruction positions is as follows:

Rank	Number	Percent
Professor, chairman of department, or dean	45	45.5
Associate professor	11	11.1
Assistant professor	26	26.2
Instructor	17	17.2
Total	99	100.0

The rank of positions is very poorly balanced. There are not enough associate professors and instructors and there are too many professors, chairmen of departments, and deans. There should be better balance in the position ranks, with the largest numbers in the two middle ranks.

Qualifications of Instruction Personnel: The average age of faculty members, by schools of the institution, was as follows:

School	Range of Ages	Average Age
School of music	27-63	40.6
School of law	32-57	41.3
College of arts and sciences	24-73	45.8
School of journalism	30-76	46.8
School of forestry	34-60	47.6
School of business administration	32-67	48.8
School of pharmacy	32-62	49.0
School of education	56-73	65.7
All schools of the university	24-76	45.9

An average age of nearly 46 years is too high for the average age of an instruction staff. The average age is particularly high in the school of education.

Thirteen members of the instruction staff of the university are above 60 years of age and 8 of these are above 65 years of age.

The educational attainments of faculty members were as follows:

School	Percentage of Staff Holding Each Degree *			
	No Degree	Bachelor's Degree	Master's Degree	Doctor's Degree
College of arts and sciences	0.0	12.5	32.8	54.7
School of law	0.0	0.0	57.1	42.9
School of education	0.0	0.0	66.7	33.3
School of pharmacy	0.0	0.0	66.7	33.3
School of journalism	0.0	40.0	40.0	20.0
School of forestry	0.0	42.9	42.9	14.2
School of business administration	0.0	25.0	75.0	0.0
School of music	33.3	33.3	33.4	0.0
All schools of the university	3.9	16.7	39.2	40.2

* Or equivalent

From the standpoint of degrees received, representing high levels of professional training, the staff ranks very high. This is particulary true of the college of arts and sciences. In some of the departments every faculty member, and in others nearly every one, holds a doctor's degree, with specialization in his field of study.

There are, however, too many members of the staff who hold only the bachelor's or master's degree. A master's degree is rarely adequate preparation for college instruction, except in certain subjects, or with rare individuals. While the staff is above that of the average university in amount of training, there is room for considerable improvement in the training of staff.

The average number of years of experience of members of the instruction staff may be shown as follows:

School	Instruction in This University	Instruction in Other Institutions	Other Educational Work	Other Work	Total
Education	31.7	2.3	8.7	2.0	44.7
Forestry	13.4	2.9	0.1	6.7	23.1
Journalism	10.4	0.2	0.4	11.4	22.8
Pharmacy	16.7	2.0	1.7	0.7	21.1
Arts and sciences	12.2	4.1	2.1	1.5	19.9
Business administration	11.0	1.0	0.0	5.3	17.3
Music	10.3	2.2	1.0	1.1	14.6
Law	9.9	2.0	1.0	1.6	14.5
All instructors	12.7	3.3	1.9	2.4	20.3

The staff has had many years of experience as is to be expected of a faculty of an average age of 45.9 years.

An attempt has been made to evaluate the importance of professional honors earned or received by members of the staff. The results were as follows:

School	Number of Faculty Members Receiving Honors		
	High Significance	Minor Significance	Little or No Significance
Arts and sciences	3	19	42
Education	2	0	1
Forestry	1	2	4
Business administration	1	0	3
Law	0	3	4
Pharmacy	0	2	1
Journalism	0	1	4
Music	0	1	8
Total	7	28	67

Data were furnished for 102 faculty members, including the librarians who teach classes. Very few of the faculty members had received high honors in their fields, such as the holding of an office in a national professional association in their field, a Rhodes scholarship, and the like. One member, however, had received two or three honors that might be classified as significant.

Similarly, faculty members were rated as to the number and apparent significance of publications in their fields of specialization, as these were reported by the members. The results were as follows:

Many books or articles in special field, or some of apparent significance	8
Few or no books and few articles in special fields	33
No publications or only two or three minor articles	61
Total	102

A majority of the faculty has made very little contribution to their special fields of study.

Conclusion: It has been shown that the staff members have had considerable experience in college and university teaching and the members are, on the average, quite well qualified from the standpoint of special training received. Few have received significant professional honors and few have made significant contributions to their field of learning. The conclusion is that, while faculty members of promise have been selected, they have not fulfilled that promise, as well as might have been expected, after coming to the university. Still, there are several individuals on the faculty who have met expectations. Possibly the difficulty is the lack of stimulation in the small staff of each organization unit or possibly it is the lack of contact the members of the faculties of the several schools and departments have with faculties of other universities. It is believed that the employment of a few more men of high ability, for certain departments, would give "tone" to the staff and would stimulate other faculty members and graduate and undergraduate students to more scholarly accomplishments. This should be done as members of the present staff are retired or leave the institution.

Scope of Educational Activities:

Credit Hours Offered and Taught: A comprehensive sample of the number of credit hours offered for 1940-1941, and actually taught that year, in the college of arts and sciences, shows that 90.7 percent of the credit hours offered were taught. In some departments too many courses are being offered for the number of students available to enroll in them. The number of credit hours offered should be reduced, considerably, in the departments of physical education, classical languages, speech and dramatics, and geology and in the school of music.

The university follows the very commendable practice of indicating the year in which courses that are offered in alternate years will be taught.

Method of Modifying Curricula: The dean of the faculty is chairman of a large curriculum committee, consisting of the deans of schools, the chairmen of departments, full professors, and the registrar. In fact, this appears to be the only function of the position of the dean of the faculty, to preside over this committee, though the incumbent of the position is also dean of the college of arts and sciences, chairman of the department of chemistry, and a teacher of chemistry, which gives him a full load, outside of his duty to preside over the deliberations of the curriculum committee, as dean of the faculty.

The committee on curriculum has direct responsibility for adopting any proposed changes in the curriculum, including the addition or modification of courses. The steps are as follows:

Discussion of the proposed change, by the head of the department or school which makes the proposal, before the committee.

Discussion, at length and in detail, by the head of the department or school, with a subcommittee of the curriculum committee.

Presentation of the subcommittee's recommendation to the full committee for adoption.

Presentation of the full committee's report to the faculty for adoption.

The method in use for curriculum control has not been effective in controlling curriculum expansion. Nearly all heads of departments have special interests in their fields of study and desire to transfer those interests to students. In any college, or university, heads of departments have a short-sighted view of the curriculum as a whole and many of them will propose all sorts of highly specialized and unsuitable courses for the curriculum. Also, each faculty member desires to build up his department.

Examples of highly specialized courses, open to undergraduate students, which were offered but not taught last year, are the following: advanced taxonomy, physiotherapy, emotions and motivation, Lucretius, Pliny and Martial, Irish literature since 1890, literary values, French poetry, petrology, mineral deposits, geologic surveying, theoretical physics, and many others.

If the curriculum committee operated effectively, courses for which there is little demand, and too large a number of highly specialized and theoretical courses, would not be offered.

It is recommended that the curriculum committee consist of the deans of all schools and the college of arts and sciences, the heads of the four divisions in the college of arts and sciences, and the registrar, and that curriculum matters relating to the curriculum be presented directly to the faculty after being adopted by this committee.

Curricula: The institution has a wide variety of curriculum patterns and variations that may be followed by students in completion of a college or professional course. Students are offered curricula leading to the following degrees:

Bachelor of arts
Bachelor of science in medical technology
Bachelor of nursing
Bachelor of arts in business administration
Bachelor of arts in education
Bachelor of arts in journalism
Bachelor of music
Bachelor of laws
Bachelor of science in forestry
Bachelor of science in pharmacy
Master of arts
Master of science in forestry
Master of science in pharmacy
Master of science in botany and forestry
Master of education

The bachelor of arts degree is awarded for the completion of many curriculum combinations of subjects and for majors in the various departments of the four divisions of the college of arts and sciences.

The duplication of curricula with those offered in the other units of the University of Montana will be discussed in a report dealing with all of the institutions that comprise the university.

Graduation Majors: Last year the bachelor's degree was conferred upon 332 graduates in the regular session and 31 graduates in the summer session, making a total of 363 college graduates for the year. Graduation majors that were taken in specific subjects are shown in the table on the next page.

The number of graduates is not a measure of the size of the departments in terms of the amount of work performed. The number of student credit hours taught in each department, and the number of equivalent full-time students, which are measures of size, will be shown later in tabular form, in the discussion of the work loads of the teaching staff, by subjects, or departments.

Major	Number of Graduates: Regular Session	Summer Session	Total
Business administration	64	8	72
Forestry	39	0	39
Economics	29	2	31
English	30	1	31
Law	19	2	21
Education	12	9	21
Home economics	20	0	20
Journalism	15	1	16
Hisotry	10	4	14
Pharmacy	11	0	11
Chemistry	10	0	10
Bacteriology and hygiene	8	0	8
Physical education	8	0	8
Mathematics	7	1	8
Music	7	0	7
Premedical sciences	7	0	7
Spanish	5	0	5
Zoology	4	1	5
Wild life technology	4	0	4
Botany	4	0	4
Law	3	0	3
Fine arts	3	0	3
French	3	0	3
Library economy	3	0	3
Psychology	2	0	2
Latin	2	0	2
Geology	2	0	2
Medical technology	1	1	2
German	0	1	1
Total	332	31	363

Graduate Study:

One year of graduate work is offered, leading to the master's degree. No work is offered beyond the master's degree. Last year 15 courses in various departments were restricted to graduate students. Most of the work offered for graduate study is open to undergraduates. It is estimated that about five classes, in addition to those restricted to graduate students, had only graduate students in them.

Graduate work is offered by 22 departments and schools. In the regular session of 1940-1941, there were 63 graduate students registered in 16 of these schools and departments and 29 of the students of the school of law held the bachelor of arts degree, but were working towards their bachelor of laws degree. Some of the 63 students in the other departments were not candidates for the master's degree.

Of the 22 departments and schools offering graduate work, six had no graduate students last year. These were journalism, geology, botany, physics, psychology and philosophy, and the fine arts. The offering of graduate degrees requires specialized courses, even though the courses may be open to undergraduate students. It would be well to reduce the number of fields in which the institution offers graduate work, as a means of reducing the number of highly specialized courses in departments having only undergraduate students or not more than one or two graduate students.

Last year, only ten master's degrees were conferred, two in the regular session of 1940-1941, and eight in the summer session of 1941.

What has been described is the graduate work done in the regular session last year. The number of graduate students in some departments and schools has declined this year. In one school, the school of education, there were 12 graduate students last year and there are only two this year.

In addition to the 92 students of graduate grade of the regular session, there were 266 summer session students who held degrees and were enrolled in the institution for nine weeks. This was 41 percent of the total number of summer session students.

Organized Research:

There is very little organized research carried on in the institution. The state has not appropriated money for research and very little of private funds has been granted for research. A grant of $1,000, by the National Research Council is being used for research in zoology. Also, a professor of geology receives outside funds for research in the summer months, but these are not furnished through the university and the amount is not on record.

In the main, research is incidental. The research function of a university is as important as the instruction function. It is the amount of creative activities that usually distinguishes a university from a college. No institution is a real university without research. Montana State University is fulfilling its research function very poorly, in most of its schools and departments.

The state spends no money for organized research. Even the forestry school nursery is operated on funds received from the sale of nursery stock and from the federal government to the extent of one-half the cost, under provisions of the Clark-McNary law.

Notable research is being done by a very young professor of geology and he already has produced creditable results. He should be kept in the employ of the state of Montana, though more appropriately in the school of mines than in the state university. Research work, worthy of mention, is being done, and has been done, in mathematics, forestry, law, biology, chemistry, classical languages, anthropology, and possibly in a few other schools and departments, but most of the schools and departments can cite nothing, or very little activity in the past or present, in research.

Those individual professors, who are now engaged in research and have a record to support the view that they are capable of accomplishing important results in their fields, should be encouraged. Enrollment has declined this year and the appropriation for the support of the institution has been increased. It is recommended that the most capable professors and others of lower rank, regardless of age, but particularly the younger ones, if they show promise of accomplishment, be assigned for a part of their time to work in research projects in their field of specialization. Such part of their time and the time of assistants, if any are needed, should be charged to organized research.

It is further recommended that efforts be made to secure private funds for research to be done by those members of the staff who are most capable of doing research of high quality.

Much more research should be done in economics, business, education, social sciences, law, forestry, and also in other fields. Much of the research should be, and naturally will be, related to life and conditions in Montana. Research in the fields mentioned would doubtless result in great benefit to the people of Montana, in the fields covered, just as research in agriculture at the state college has been of great assistance to the farmers and ranchers of the state.

The state cannot afford to expend large amounts for research, but as soon as the state can afford to do so, each annual budget should contain from $25,000 to $50,000 to be used for the financing of such definite research projects as are approved by the president of the institution, on the advice of a faculty committee.

If research is developed, there will arise the problem of publication of that part of it that is of value to residents of Montana and the Northwest. This can be considered as a part of the extension of research and can be taken out of the appropriations for research. Many universities publish departmental magazines, with heavy subsidization, but this is not recommended, because a regularly published magazine must be published whether or not there is anything of importance to publish. The bulletin form of publication, as used by the agricultural experiment stations, in this and other states, is more economical and effective.

Size of Classes:

Class Enrollment: The average size of classes is an important factor in determining the cost of instruction and in determining the effectiveness of instruction. In many subjects, it is undesirable to teach very small or very large classes.

For this report a class is considered to be a course taught for one or several times a week for a quarter. Separate sections of the same course or subject are considered to be separate classes. The number of classes and the percent of all classes taught, according to enrollment size, by quarters, for the regular session of 1940-1941 were as follows:

Class Size (Students)	Classes of Stated Enrollment							
	First Quarter		Second Quarter		Third Quarter		Total	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1-4	47	12.1	37	9.6	49	12.7	133	11.5
5-9	51	13.1	51	13.2	54	14.0	156	13.4
10-14	36	9.3	53	13.7	45	11.7	134	11.6
15-49	221	56.8	213	55.2	215	55.8	649	55.8
50-74	18	4.6	15	3.9	12	3.1	45	3.9
75-99	7	1.8	7	1.8	3	0.8	17	1.5
100-149	2	0.5	5	1.3	2	0.6	9	0.8
Above 149	7	1.8	5	1.3	5	1.3	17	1.5
Total	389	100.0	386	100.0	385	100.0	1,160	100.0

There were more small classes the third quarter than the second and more the second quarter than the first. In the whole regular session 423 classes, or 36.5 percent of all of the classes taught, had fewer than 15 students enrolled, and 24.9 percent had fewer than ten students enrolled. Only 55.8 percent of all the classes fell within the generally satisfactory enrollment size of 15 to 49 students. There were too many classes of small enrollment each quarter. This is a result of a large program of offerings with relatively small enrollment in the university. It is probable that,

with the decline of enrollment this year, classes are even smaller than last year, since the program of offerings has not been contracted, accordingly. Most classes of small enrollment should be offered only in alternate years, as a means of increasing enrollment in them, or should be discontinued.

There were 88 classes of 50 or more students. This was 7.7 percent of all classes taught. There was too large a proportion of large classes. Seventeen of the classes had 150 or more students. The largest classes had 324, 349, and 357 students.

The average size of classes was as follows:

Quarter	Average Class Size
Autumn	29
Winter	28
Spring	24

The average size of class was too small, in spite of the fact that there were some very large classes to partially offset the small classes. Fewer small classes and fewer very large classes would improve the class size situation at the university.

Subjects of Small Enrollment: The number of classes of small enrollment for the three quarters of 1940-1941 was as is shown in the table on the next page.

The table shows in which subjects there are many classes of fewer than ten students. The number of small classes should be reduced in all subjects listed, but particularly in physical education, modern languages, English, home economics, music, and other subjects having large numbers of classes of small enrollment.

Classes of Large Enrollment: Classes of large enrollment (above 75 students) were classes for freshmen in social science, biological science, physical science, and the humanities, and for students of various grades in chemistry, history, military science, chorus, psychology, economics and sociology, business administration, and English. Classes in chorus and military science can and must be large. Most of the other classes should be divided into sections for more effective instruction.

Subject	Number of Classes of Small Enrollment: From 1-4 Students	From 5-9 Students	Less Than 10 Students
Physical education	14	19	33
Modern languages	11	14	25
Journalism	6	13	19
Home economics	9	9	18
Music	5	13	18
English	5	11	16
Pharmacy	9	7	16
History	8	4	12
Chemistry	5	7	12
Forestry	7	5	12
Business administration	5	6	11
Botany	8	2	10
Geology	9	1	10
Zoology	8	1	9
Classical languages	4	5	9
Library economy	1	7	8
Bacteriology and hygiene	1	6	7
Fine arts	2	5	7
Physics	4	3	7
Education	3	3	6
Mathematics	3	2	5
Economics and sociology	3	2	5
Law	0	3	3
Psychology	2	1	3
Religion	1	2	3
Military science	0	1	1

Work Loads of Instruction Staff:

Hours of Service per Week: Each member of the faculty was requested to state, on an analytic card, the number of hours a week he devotes to each of several specific instruction duties and to each of several other duties that are, or may be, a part of his work. The results, for the full-time instructors, were as follows:

School	Average Number of Hours per Week Devoted to: Instruction	Other Duties	Total
Music	42.6	15.5	58.1
Journalism	34.2	22.4	56.6
Arts and sciences	38.5	17.3	55.8
Law	39.6	12.2	51.8
Forestry	34.4	17.4	51.8
Education	34.3	16.3	50.6
Business administration	38.8	11.2	50.0
Pharmacy	36.7	12.0	48.7
All schools	38.2	16.7	54.9

The average work load was very heavy last year. The number of hours devoted to instruction duties was not exceedingly heavy, but the number of hours devoted to administration, supervision, committee work, and the like was, relatively, very heavy. This was, doubtless, due in part to the disorganized state of affairs in the institution, in 1940-1941. This year, with a more settled condition, the number of hours devoted to extra duties should be fewer and, with the decrease of enrollment, the number of hours devoted to instruction duties should be fewer, thus making the total number of hours of work fewer.

Measures of Teaching Load: Three commonly used measures of the teaching loads of instructors are (1) the average number of students per equivalent full-time instructor, (2) the average number of credit hours taught per equivalent full-time instructor, and (3) the average number of student credit hours taught per equivalent full-time instructor. The relationship between the first and the third of these measures is constant, so that they really constitute the same measure expressed in different terms.

Students per Instructor: The number of equivalent full-time students in the institution may be determined by dividing the average number of student credit hours for one quarter by the number of student credit hours which represents a full student load. The requirements for college graduation vary in the different schools of the institution. The general university requirement is 186 credit hours, on a quarter basis. However, the curriculum in pharmacy requires 205 credit hours; the curricula in music require from 190 to 204 credit hours; the curriculum in journalism requires 201 credit hours, and the curricula in business administration require 201 credit hours. It appears that the average requirement is about 192 credit hours, required for graduation, or an average of 16 credit hours a quarter for the 12 quarters in the four years of the college course. The average may be slightly more than 16, since the requirements in the freshman and sophomore years of the college of arts and sciences, in which college most of the students are registered, are 17 credit hours each quarter, for half of the entire college course. However, 16 credit hours will be considered to be the average full-time study load of a student for each quarter.

In 1940-1941, a total of 80,984 student credit hours were taught during the regular session. This number, divided by 48, the number of credit hours the average student studies for the full regular session of three quarters, gives 1,687, as the number of students, reduced to an equivalent full-time basis.

In computing the number of equivalent full-time faculty members, all instructors are counted as full-time instructors if they teach full time. Allowances are made for any other major duties to which instructors are assigned, but no allowance is made for minor duties, such as all faculty members are expected to perform. Work as chairman of a department is counted as instruction, but the work of deans is deducted from the teaching load. The number of faculty members, reduced to a full-time teaching basis, for the instruction of college students, in 1940-1941, was 80.5 equivalent full-time instructors.

A division of the number of equivalent full-time regular session students, 1,687, by the number of equivalent full-time instructors, 80.5, gives 21.0 as the number of equivalent full-time students per one equivalent full-time instructor of college subjects in this institution. The ratio is about right, or possibly a little high when the number of separate professional schools is considered. However, the average load is considerably lighter this year than last year, due to the decline in the student enrollment.

Credit Hours per Instructor: The number of credit hours per semester per instructor is determined by dividing the total number of credit hours taught by all instructors by the total number of equivalent full-time instructors. In determining the number of semester credit hours taught, sections of the same class are counted as different classes. In 1940-1941, there were taught a total of 3,451 credit hours in the full regular session, or an average of 1,150 a quarter. The average credit hour teaching load, for the 80.5 equivalent full-time instructors, was, therefore, 14.3. This is not a heavy average teaching load in terms of credit hours taught per instructor per week.

Student Credit Hours per Instructor: Student credit hour registrations, in 1940-1941, were 29,170 for the first quarter, 27,134 for the second quarter, and 24,680 for the third quarter, or an average of 26,995 per quarter. (Incidentally, there were 1,824 equivalent full-time students the first quarter and 1,542 the third quarter, or a loss of 282 equivalent full-time students from the first to the third quarter, which is a heavy loss, and helps to explain the low number of equivalent full-time students as the average for the year.)

The number of average student credit hour registrations per quarter, 26,995, divided by the number of equivalent full-time faculty members, 80.5, gives an average of 335 as the average number of student credit hours per equivalent full-time instructor. This is a fair average load and falls within the standard of 300 to 350 as the acceptable average student credit hour load per equivalent full-time instructor. Hence, last year, the number of equivalent full-time faculty members was about right for the teaching load in terms of equivalent full-time students. Perhaps, in view of the fact that there is a fairly large proportion of professional work and a little graduate work, in both of which teaching loads must be slightly lighter than in regular college work, it may be considered that the loads were fully as heavy as was warranted. With the decline of enrollment, the average teaching loads may be lighter this year.

Average Teaching Loads by Departments: The three measures of teaching load, that have been applied to the institution as a whole, may be applied to each department and school of the institution. By such means it can be determined in which departments and schools teaching loads are light and in which they are heavy. In

such determination, it should be remembered that average teaching loads cannot be quite as heavy in a professional school as in the departments of a college of arts and sciences and that they cannot be quite as heavy in a few departments, such as music and art, as in other departments, such as history and chemistry, because of the traditional methods employed in teaching music and art. The average student credit hour load, per equivalent full-time instructor, the average credit hour teaching load on the same basis, and the number of equivalent full-time students per equivalent full-time instructor, by departments, for 1940-1941, may be shown in the table on the next page.

The average teaching loads were extremely heavy in the social science departments of history and economics and sociology. They were also heavy in the school of business administration. Several more instructors were needed in these subjects. On the other hand, the departments of physical education, geology, home economics, and the school of music were overstaffed. It would be advisable to reduce the staff in departments in which teaching loads were light and to increase the staff in departments in which teaching loads were heavy. In order to do this it would be necessary to reduce the number of small classes in the overstaffed departments and to reduce the elaborate programs in some of the departments.

The average teaching load in chemistry was also very heavy. The average load probably has been reduced this year, but it could not have been reduced sufficiently to bring it within desirable limits. The department of chemistry used considerable student assistance in laboratories, which was not included in the computation of staff members. Still, the average teaching load in chemistry should be reduced. An additional instructor of chemistry was warranted as of last year. With the reduction of teaching load this year, perhaps someone could be secured who could assist in both chemistry and zoology.

The average teaching load in the classical languages is heavy because the instructors teach large groups of freshmen the general course in the humanities. It is well that they should do this since their classes in the classical languages are rather small, but this gives the instructors a rather heavy teaching load. Perhaps a little more of the work could be taught by the instructors of modern languages or by the instructors of music.

The teaching loads in some of the professional schools are rather light, but it should be considered that the work of the law school is largely above the undergraduate college level. Little can be done to increase the teaching loads in journalism and pharmacy unless the staffs are reduced. This year there is one less instructor in journalism and the position should not be filled. The advisability of operating the school of pharmacy is very doubtful. The employment of three instructors for the school makes it an expensive school.

College Department or School	Equivalent Full-Time Instructors	Average Quarter Student Credit Hours	Average Quarter Credit Hours	Measures of Load per Equivalent Full-Time Instructor		
				Student Credit Hours	Credit Hours	Equivalent Full-Time Students
History	3.5	2,240	51.9	640	14.8	40
Economics and sociology	3.6	2,083	51.9	573	14.4	36
Business administration	3.7	2,100	76.7	568	20.7	36
Chemistry	2.8	1,524	44.6	544	15.9	34
Psychology	2.4	1,073	34.0	447	14.1	28
Classical languages	2.0	890	32.5	445	16.3	28
Zoology	2.7	1,179	40.9	436	15.1	27
Botany	3.5	1,347	52.6	385	15.0	24
English	7.3	2,740	103.9	375	14.2	23
Education	2.4	808	31.0	337	12.9	21
Fine arts	1.0	329	19.5	329	19.5	21
Modern languages	6.2	1,957	104.0	316	16.9	20
Mathematics	3.8	1,163	57.1	306	15.0	19
Forestry	5.0	1,474	70.5	295	14.1	18
Physics	1.5	435	19.1	290	12.8	18
Physical education	3.9	1,038	61.3	266	15.7	17
Bacteriology	1.0	237	19.2	237	19.2	15
Geology	1.5	337	25.0	225	16.7	14
Law	4.8	1,059	45.0	221	9.4	14
Journalism	3.5	652	43.7	186	12.5	12
Home economics	4.2	762	59.0	181	14.0	11
Music	6.4	1,140	55.7	178	8.7	11
Religion	0.1	17	3.0	170	30.0	11
Pharmacy	2.9	341	38.7	118	13.3	7
Library economy	0.8	92	10.0	115	12.5	7
Total	80.5	26,997	1,150.8			
Average				335	14.3	21

Teacher Training:

The institution trains junior and senior high school teachers and principals, supervisors, and superintendents of schools. It trains teachers from grades 6 to 12, and, thus, covers three of the elementary school years in its training program. Some of the teachers are placed in the upper grades of the elementary schools of the state. Its training program overlaps four grades, 6 to 9, inclusive, of the training programs in the normal colleges of the state. It trains teachers in nearly all academic subjects and in commercial subjects, music, art, physical education, and home economics.

In home economics, it fulfills the requirements for the training of teachers of high schools receiving Smith-Hughes aid and, thus, directly duplicates the training of Smith-Hughes home economics teachers by the state college. There are not enough high schools in the state, having Smith-Hughes home economics, to warrant the training of Smith-Hughes home economics teachers in two state institutions. It is recommended that the training of home economics teachers be discontinued at the state university.

Practice teaching is done in the high school and in the upper grades of the elementary schools of Missoula. The university pays critic teachers $20 for the training of each student teacher. Students serve with the regular classroom teachers for 11 or 12 weeks, observing and practicing under their directions. Group conferences with the practice teachers are held three times a week, and private conferences are held occasionally by one of the instructors of the staff of the school of education. About 95 percent of the students, who are preparing to teach, take practice teaching. The only exceptions are such students as have had experience as teachers or have taken practice teaching in other colleges.

The method is more economical and can be made more effective than the maintenance and use of a campus training school. The schools of Missoula are scarcely large enough to furnish adequate practice teaching facilities for 113 practice teachers, though a campus training school would be even less adequate. Last year 35 students took practice teaching the first quarter, 43, the second quarter, and 35, the third quarter. Ten or eleven of the students each quarter did their practice teaching in the upper elementary school grades. The high school has an enrollment of about 1,400 pupils and the seventh and eighth grades of about 700 pupils. It should not be assumed that every teacher of these pupils is capable of instructing practice teachers. It would be advisable for the university to select excellent teachers for critic work in other cities, such as Butte, Helena, or Great Falls, and to train some of its practice teachers elsewhere than in Missoula.

One serious defect of the training of teachers is that the various instruction departments of the university give courses in methods of teaching and then pay no attention to practice teaching. In all, 32½ credit hours are given in methods of teaching various subjects by the university instructors of the subjects. Most of the members of the staffs of the various departments know little or nothing about high school teaching and, in many cases, are likely to be unsatisfactory teachers of courses in the methods of teaching. Anyway, they do not now determine whether or not the methods they teach are being applied by practice teachers in the classrooms. Methods and techniques of teaching should be closely correlated with practice teaching to be effective. It is recommended that all special methods courses be discontinued and that a general methods course be taught in the school of education to practice teachers of all subjects and be correlated closely with practice teaching.

The students now have only 20 hours of observation and 35 hours of practice, or 55 hours in all for five hours of credit. With the addition of the conferences, the work may be adequate for the credit allowed, but it is believed that students should spend more time in the classroom of the high school, and it is recommended that the requirement be 30 hours of observation and 60 hours of practice. If three hours of conferences are necessary, each week, the credit could be raised to six quarter hours. An additional general methods course, closely correlated with the observation and practice teaching would raise the credit to, say, eight hours for the combined work of methods and practice teaching, with 90 hours of observation and practice teaching.

The training of superintendents and principals is inadequate, but with registrations so small it seems to be necessary to combine the work of those preparing for administrative positions and of high school teachers who desire a master's degree.

Most of the teachers are placed in small high schools of two to six teachers for their first year of teaching. The university placement service is open to all graduates of the institution, though few, except teachers, take advantage of it. The schools of law, forestry, and pharmacy place their own graduates, and the school of business administration places most of its graduates, though the bureau of placements helps to place the graduates of the school of business administration. Last year, 54 new teachers were placed by the bureau. The other new teachers found their own positions. The bureau placed 95 experienced teachers.

Summer Session:

A summer session was held in 1941 from June 16 to August 15. A special summer session bulletin listed courses in nearly all departments of the college of arts and sciences and in the schools of business administration, music, journalism, and education. Since many of the students are teachers from high schools of this and other states, a large program of courses was offered in education. No work was offered by the schools of law, pharmacy, and forestry, but summer work, required of students who desire to complete the course in forestry in four years, will be given by that school, beginning in 1942.

In 1940, there was a registration of 853 students in the summer session. In 1941, the registration dropped to 655 students. Of these, 266 were graduate students. As has been shown, previously, 244 of the 655 students, or 37 percent were non-residents of Montana.

Most of the summer session classes were small. Of the 199 classes taught last summer, 147, or 73.9 percent, had fewer than 15 students, and 115, or 57 percent, had from one to nine students. The average class size for the summer session was 11 students. This suggests that the program of offerings for the summer session is too elaborate for the number of students enrolled. The offering of fewer courses would increase their size.

Last year, 62 members of the instruction staff were retained for the summer session and 12 additional instructors were employed, making 74 in all. At the same ratio of staff to students as in the regular session, 33 staff members would have been adequate for the summer session.

The range of compensation for outside summer session instructors was from $150 to $400. The average compensation was $354. Last year, 22 instructors of the regular staff were guaranteed $400 for summer work. Others were paid $280 for six weeks of work. Those who taught without a guarantee were paid $2 per student credit hour for undergraduate students and $3 per student credit hour for graduate students. The attempt is made to keep the work on as nearly a self-supporting basis as is possible. It is operated on a self-supporting basis, according to the account, which showed the 1940 summer session as having an income of $20,768.94 and expenditures of $20,851.56. However, no proportionate charges are made for the time of administrative officers, the upkeep of the physical plant, and general library expense, so it cannot be maintained that the summer session is fully self-supporting. Income from fees dropped from $20,693.70 for the summer of 1940 to $15,664.42 for the summer of 1941.

It would be advisable to employ not more than 35 or 40 teachers for the summer session and to free the rest of the staff for advanced work at other universities or for work on research problems in their special fields, with some payment from the university to those who are qualified to do productive research work. This should be done as soon as the university is financially able to finance a program of research.

Extension Services:

The university operates extension class and correspondence work under the direction of a director of public service. No courses are offered that are not offered in the regular university curriculum. All courses are taught by regular university instructors. The work is taken largely by teachers and by students who desire to earn credits while not in residence at the university. Most of the work is given in education, English, social sciences, mathematics, and business administration.

Formerly, extension and correspondence work were in a division of public service. This included direction of the placement of teachers and other activities. A year or two ago direction of the placement service was removed from the division of public service and placed under a different instructor of the college of arts and sciences. The speaker's bureau was removed and placed in the president's office. Aviation students still register in the division, but the division has no control over the work of the CAA. The only work under the director, now, is extension class and correspondence study, yet the cost of some of the other activities is still being charged to the division of public service. The accounting system should be so changed as to conform with the changed plan of organization.

Last year, five classes were held at the institution, two classes were held in Hamilton, two classes were held in Butte, and one class was held in Anaconda. The enrollment was 244 students and subject registrations were 292, which is an average class size of 29.2 students. The establishment of classes under 15 students is not encouraged. However, the matter of the establishment of a class is usually left to the instructor. The smallest class, last year, had more than ten students in it and the largest class had fewer than 40 students, according to data submitted by the division. By November 1, 1941, three courses were being taught with an enrollment of only 39 students. Other classes will be started later.

All extension class instructors are members of the regular teaching staff of the university. They are paid 75 percent of fees collected for courses given in Missoula and 85 percent of fees collected for courses given in other cities, with some modification under certain conditions. Fees are charged at the rate of $2.50 per credit hour. Thus the fee for a five-hour course would be $12.50 and for a three-hour course, $7.50. The fee for auditors is $5. The practice of paying fees to instructors is pernicious. It may lead to all sort of difficulties in the conduct of the work. Under this plan, the professor who is not too particular about maintaining high standards may earn twice as much in fees as the professor who requires far better work of his students.

Extension class work is not being operated satisfactorily. Extension fees are deposited in the treasury and there is some tendency to slight extension work as a means of saving more for the operation of the institution. This should not be done. It is here proposed that extension class work be given as a part of the regular work of the institution, without designation as extension work, that it be given merely as regular class work, but in the evenings and on Saturdays, and that it be considered as a part of the regular teaching loads of instructors, and be given without additional remuneration.

In 1940-1941, a total of 648 students were enrolled in correspondence courses, though these students had 811 subject registrations, since some of them took more than one subject by correspondence. There were 2,592 student credit hours registered in correspondence subjects last year. This year, the number of registrations in correspondence courses was 309 late in December, but new registrations will be made throughout the college year.

Correspondence courses are offered in education, English, mathematics, economics and sociology, history and political science, business administration, Spanish, French, German, Latin, music, psychology, home economics, geology, bacteriology and hygiene, zoology, religion, and journalism. Fees of $2.50 per credit hour are charged. In addition, a charge of $1 per course is made for postage. Instructors are paid 70 percent of the correspondence study fees collected for their courses.

In 1940-1941, receipts for the extension division amounted to $6,845.74 and expenditures amounted to $6,832.01. Since 1928-1929, there have been only two years for which expenditures exceeded income. During the period of 13 years since 1928-1929, the division has accumulated a capital surplus amounting to $7,885.19. The work has been more than self-supporting.

There is duplication of correspondence work given by the university and the three smaller colleges. It is recommended that correspondence work be given only from Montana State University, or under the auspices of the state university. It costs no more to mail materials from Missoula than from any other city. Centralization would reduce the expense of preparation of duplicate courses and better control could be exercised over the quality of correspondence work if given from only one center.

Libraries:

The main library consists of 212,085 books, exclusive of the law school library, which is under separate organization. Of these, 9,200 volumes are bound magazines and 14,282 volumes are bound government documents. The library is designated as the state depository for federal government documents. This is an exceedingly large library for a university of fewer than 2,000 students and with very few graduate students, though with a fairly large proportion of professional students.

Some of the departments have separate libraries but all books are ordered and cataloged by the central library.

Last year, 4,028 books were added to the library, of which 2,700 were added from appropriated funds, 635 were added from the textbook fund, 513 were added by gift, and 180 were added by exchange. Only about 200 books were destroyed this year. The library subscribes to a great many series of books, the total listed by the librarian being 142. Such series are usually very expensive and should be kept as low in number as is consistent with the maintenance of the principal library of the state. The library subscribes for 472 magazines and receives 142 others as gifts.

The library is housed on one floor of the library building and classes are held on the other two floors. The library building is poorly planned for its purpose. There is much waste of space in corridors; there is no ventilating system; the reading room is lighted from a high ceiling, which greatly reduces the effectiveness of the artificial lighting system; the reading room is very hot in the summer session; the seating is wasteful of reading room area, for it is of the individual desk type; the ceiling of the reading room is exceedingly high and the walls are not constructed of sound-absorbing materials, so that it is not quiet enough for reading purposes.

The reading room will seat 250 students and about 75 more can be seated in the reserve book room. However, the reserve book room is used for handing out books to the freshmen who are registered in survey courses, so that it cannot be used for general reading purposes. The method of having freshmen restricted to the study of textbooks from the library shelves is inefficient. It is suggested that books for freshmen courses be rented by the bookstore

to the freshmen so that they may study them in their rooms, in the library, or at home at week ends. Moreover, to have each freshman rent books he needs for his survey courses would save a part of the expense of employment of student assistants. This would make the reserve reading room available for use as a library reading room and would furnish nearly enough library seats for the institution.

There is not room enough for the storage of any additional books on the stacks. However, there should be no need for more stack room. Books required to keep the library up to date, should displace useless books on the library shelves.

The library building should be remodeled for purposes as a library. More reading room should be furnished. The present reading room should be made more suitable for its purposes. Some of the classes, now occupying the building, should be moved to other buildings.

Student Welfare Enterprises:

Student Guidance and Counseling: As has been explained, elsewhere, the guidance and counseling functions of the institution are scattered through various organization units, with no coordinating officer for the work, short of the president of the institution, to whom the heads of the several units are all directly responsible. These should all be consolidated, so far as possible, under a dean of a division of student personnel, and any guidance functions, that must remain in the instruction departments, should be coordinated with the work of the division of personnel by the dean of the proposed division.

Health and Medical Service: The university maintains health and medical service for students on a self-supporting basis from a fee charged each student of $3 a quarter or $9 for the regular session. Receipts of the health service fund amounted to $17,294.92 in 1940-1941. Expenditures amounted to $15,834.35.

Last year, 10,955 office calls were received, 10,640 students were treated for minor ailments, and 315 students were in a hospital for 1,035 student hospital days. Vaccination, innoculation, and other disease preventive measures are not compulsory, but students are encouraged to be immunized. The university has agreements with local hospitals for reduction of hospital charges for prompt payment of bills.

The university employs two physicians, a nurse, and a secretary and technician, all for full-time service. The number of employes is larger than should be necessary for an institution the size of the university. It might be advisable to discontinue the services of one of the full-time physicians and employ but one physician. The saving might be used either to pay a larger proportion of hospital expenses for students, or a part of the expense of operations required by students, or the health service fee could be reduced below $9. At any rate it would seem that the services of two full-time physicians should not be necessary for a university of about 1,500 students.

Residence Halls and Dining Halls: The institution operates two dormitories for men and two for women. The dormitories for women are nearly filled, but the dormitories for men have many vacant rooms. Freshmen, whose homes are not in Missoula, are required to live in dormitories. Charges of $30 per quarter are made to each student who occupies a double room and of $45 for a single room.

Accounts are kept, separately, for each dormitory, by the residence halls bookkeeper. Accounts are charged for repairs, heat, light, water, telephone service, and domestic and janitorial service.

Dining rooms are operated in the halls for freshmen men and freshmen women and a kitchen in the residence hall for upperclass men is used to serve the dining halls in the two residence halls for upperclass men and upperclass women. The charge for board is $25 a month. The dining halls are under the direction of the director of residence halls, whose salary is paid in part from residence hall funds and in part from home economics instruction funds. The dining hall accounts are kept separately by the residence halls bookkeeper and are properly charged for repairs, equipment, heat, light, power, and telephone service.

Income from the operation of the residence halls and dining halls is used to retire bonds issued for the construction of the four buildings. While accounts are kept separately for the different residence halls and dining halls, the incomes from any of the units are used to retire the bonds of any of the units as they become due.

Student Store: The student store sells textbooks, supplies, novelties, tobacco, gymnasium equipment, and other articles, and operates a soda fountain and restaurant. A manager, three cooks, a dietitian, and 30 part-time student assistants are employed to operate the student store. It is operated on a self-supporting basis, and charges are made for drayage and express, rent of space in the student union building, and telephone service.

The store is operated by the associated students of the university, under the title of Associated Students' Store, and is a non-profit corporation. All students are eligible to vote for its board of directors which consists of two members of the faculty and five students.

Student Employment, Scholarships, and Loan Funds: In 1940-1941, a total of 109 scholarships were awarded, with a value of $5,125. Of these, 51 were high school honor scholarships, 53 were state university scholarships, and five were agricultural club or statute scholarships. The freshman scholarships are granted for high average grades in high school courses and carry fee exemptions amounting to $50 a year. The state university scholarships are awarded to not more than 5 percent of college students for high scholastic standing in college courses.

Data for last year are not available for the number of scholarships and jobs furnished to athletes, but in 1939-1940, a total of 70 college students were furnished with scholarships granted for athletic achievement, amounting to $180 each. The total value was $12,513.91, of which $7,473.89 was cash paid for work scholarships and $5,041.02 was payment of fees due from athletes to the university.

In addition to the scholarships, 366 students were employed on NYA, and received federal treasury checks amounting to $27,127.56 for their services.

In 1940-1941, new loans were made to 68 students. The number of loans receivable, as of June 30, 1941, amounted to 144 on June 30, 1941, and the total amount due the loan funds amounted to $8,874.17. During the year, $4,394.91 was put out in new loans. The funds had cash on hand amounting to $2,149.24. The total assets were $11,123.41.

The administration of student employment, scholarships, and loan funds, is scattered among various officers of the university. The administration of these three kinds of benefits to students should be under central direction in a division of student personnel.

Sponsored Student Activities:

An intramural sports program is conducted by the university. The associated students budget a portion of their activity fee for minor sports, some of which include intercollegiate competition, and for intramural sports. In 1940-1941, a total of 670 of the 1,259 men of the institution, and 250 of the 770 women, participated in one or more forms of intramural sports. The work is conducted as a part of the physical education program. The sports include softball, baseball, basketball, touch football, volley ball, badminton, track, swimming, hockey, tennis, archery, boxing, wrestling, golf, and others. Intramural sports need encouragement, so that more students will participate.

Intercollegiate athletic competitions are entered in football, basketball, track, golf, tennis, boxing, wrestling, fencing, riflery, swimming, and cross country running. Intercollegiate athletics is under the control of a director of athletics, who is responsible directly to the president of the university. Some measure of control is exercised by a faculty athletic committee, appointed by the president and an athletic board appointed by the associated students. An athletic manager makes the athletic schedules.

A total of 63 athletes were granted scholarships, consisting of the payment of fees, of which 40 were for the three quarters of the regular session. The average value of the fees paid was about $100. The awards were made from funds contributed from private sources. Athletic scholars are recommended by the coaches and are approved by a scholarship committee, including the deans. The requirement is athletic ability of the student and his eligibility for participationin athletics.

Income for athletics, for 1940-1941, was as follows:

Athletic contests	$20,970.17
Athletic fees	12,601.88
Other athletic sources	21,888.06
Total	$55,460.11

The total cost of athletics, including the salaries of coaches, for the proportion of time they devote to intercollegiate athletics, is stated to have been $62,308.52 in 1940-1941. This also includes a small amount of expense for intramural sports. The cost of intramural sports should be included in the cost of physical education, as a part of the educational program. The cost of intramural sports, probably, would be only a few hundred dollars. Athletics should be conducted on an entirely self-supporting basis, since it is conducted as an entertainment program for students, alumni, and others.

Dramatics and forensics are under the control of faculty members of the English department. These activities are well developed. The institution supports a 100-piece band and a 30-piece orchestra. There is also a large mixed chorus, a glee club, and an all-school musicale, which uses the talents of 254 students in singing and managing the enterprise.

The students operate a daily newspaper, a general student year book, a school of forestry yearbook, a freshman dormitory year book, a publication of the school of law, and a literary publication. As the accounts are kept, these publications are all on a self-supporting basis. There are certain overhead costs for supervision that are not included in their cost.

The entire student body constitutes an organization designated as the Associated Students of Montana State University. This association has charge of the various student activities and the allocation of moneys collected from students.

The student union building, constructed in 1935, is an excellent headquarters for the centralizing of many student activities. It furnishes offices for student organizations, a lounge for students, a restaurant, a student store, a theatre, a dance floor, and other facilities for organized and unorganized student recreation and activities.

Physical Plant:

Value: The value of the physical plant is stated to be, as determined by cost and appraisals, as follows:

Land and land improvement, exclusive of gifts of land to the forest and conservation experiment stations	$ 325,000
Buildings	2,500,000
Equipment, including books	750,000
Total	$3,575,000

Assuming $3,575,000 to be the correct valuation of the plant, the valuation, for the 2,036 students enrolled in the institution in 1940-1941, would have been $1,756 per student. The valuation, for the 1,508 students enrolled in the university as of November 1, 1941, was $2,371 per student. The valuation of plant per student is rather high, but is no higher than in many other universities. In most states, valuations per student, during the depression years, rose much faster than the rapid increase of enrollment but, with the present decreasing enrollment in nearly all universities and colleges, the valuations per student will continue to increase. The valuation per student, at this university, is now so high that the construction of additional buildings would not be warranted. However, this does not dispute the fact that several of the buildings are very unsuitable for the purposes for which they are being used.

Recent Additions: The student union building was completed in 1935. It was constructed from funds raised by the sale of bonds and with federal aid under the provisions of the PWA. The bonds are being liquidated by earnings from the operation of student enterprises and by a building tax charged each student. The student union building is a very suitable building for its purposes.

The journalism building was completed in 1937. It houses the classes of the school of journalism, the print shop, and the fine arts rooms. The chemistry-pharmacy building was completed in 1939. Both of these buildings were constructed with the aid of PWA funds.

New Hall, a dormitory for women, was constructed in 1938 from a bond issue and PWA funds. The bonds will be paid, as they become due, from earnings derived from the rental of rooms to students.

Adequacy of the Plant: The original campus was a tract of land of about 40 acres. The tract was granted to the state, with the stipulation that the land would revert to the grantors or their heirs in case the land should no longer be used for the university. This was an exceedingly unwise provision for the state to accept as a condition for the gift of a small tract of land for a state university. However, it is probable that the university will use the land for many years. Later 40 additional acres were granted to the state for the institution and still later Congress granted 480 acres of land on Mount Sentinel to the state for use by the university as an observatory site.

Various other additions to the campus have been made by gift or purchased from special appropriations or the maintenance budget. Other tracts of land have been acquired, away from the campus, for use in forestry instruction and biology instruction.

The campus, proper, now consists of more than 100 acres of land, including about 30 acres owned by the alumni corporation. The campus and other land are fully adequate, in area, for the needs of the university. The landscaping and upkeep of the campus are satisfactory.

Some of the classes of certain departments of the college of arts and sciences are being conducted under unfavorable conditions. Modern languages are taught in the basement of the law building. Classes in English and history are being taught in the library building and more of the room in that building is needed for use of the library. Physics is taught in the basement of old Craig Hall. Some of the classes should be moved out of the library building and the modern language classes should be moved from the basement of the law building. Also, some of the classes should be moved from Craig Hall.

The construction of a journalism building was not a wise move. That building should have been a general classroom building and the old science building might better have been reconditioned for use by the school of journalism, but the building has now been constructed. It is now possible to remodel the old science building for these academic classes. The cost of complete renovation of this building, as estimated by the state planning board, would

be $30,000. However, unless enrollment increases above present numbers, it should be possible to schedule the use of present buildings so as to alleviate undesirable conditions in the buildings mentioned. The new buildings are not now being used to capacity. With the decreased enrollment of students in the university, classrooms and laboratories in the chemistry-pharmacy building can be fitted and used for instruction in physics. In view of the present decline of enrollment and the prospect that enrollment may continue to be low, or even further decline, for several years, the construction of a new classroom building is not recommended.

Facilities for instruction in music are very poor. Music practice is held in the top story of the main building, where the administrative offices are housed, in a small frame house, designated as the music practice house, in the student union building, in Simpkins Hall and in Cook Hall, the two latter of which are frame barracks, constructed for the ROTC, in 1918. Under ideal conditions, the school of music would have a building for its own use. However, the value of plant per student is now so great that additional buildings are not warranted. It would be possible to remodel the old science building for music and to use some of the present music rooms for academic classes, but, considering the relative numbers of students in academic subjects and in music, it is doubtful if this would be justified.

The women's frame gymnasium is not very adequate for its purposes. With the decrease of enrollment, it might be feasible to schedule more out-of-doors sports for both men and women and to schedule the men's gymnasium for use by women for certain hours of each day or for certain days of each week.

The proposal, that has been made by a former local executive board, to construct a new forestry building and to remodel the present forestry building for home economics should receive no consideration, whatever. First, the forestry building is in good condition, except for some needed repairs, and is not a very old building. It is large enough for the present enrollment in the forestry school, and is suitable for the work. Second, there is some question as to the necessity for having any separate home economics building, in consideration of the fact that the work should not be permitted to develop into a separate school to duplicate the home economics work given at the state college.

The ROTC is not properly housed. Efforts should be made to secure aid from the federal government for the proper housing of the ROTC unit. There should be a building with a fireproof arsenal and an indoor rifle range.

The main hall was constructed in 1898, as one of the original university buildings. It is not very suitable for administrative offices, but it holds the central position on the campus, where the administrative offices should be located. This building should be remodeled and renovated and made as fire-resistive as possible, in order to furnish adequate facilities for the administrative offices, when the state can afford to appropriate money for that purpose.

Need for Repairs: The stacking of heavy books of the law library on the second floor of the law building has sprung the floor and made the walls sag a quarter of an inch or more from the ceilings of the library rooms. The floors should be strengthened to hold the heavy stacks. Also, more stack room is needed for the present library of law books.

The president's house is badly in need of repair, if it is to be used for the residence of the president or for any other purpose. This is an old house that was purchased from a former president in 1919. It is not an ideal residence for the president of the institution, but it has an advantage of being located on the campus.

Some of the wood floors of the rooms of older buildings are of excellent maple wood that has been covered with linseed oil, at some time in the past. These floors should be sanded, sealed, and treated with a permanent preservative.

Considerable painting of both inside and outside woodwork is needed for the old buildings and even for buildings in as good condition as the forestry building which, otherwise, needs little attention. Painting is needed for the main hall, Craig Hall, the women's gymnasium, the law building, the library building, the men's gymnasium, and several of the minor buildings.

The roofs of several of the buildings need to be repaired.

Artificial lighting is inadequate in several of the buildings. In some cases rewiring will be needed. Better artificial lighting is needed in the main hall, Craig Hall, the law building, the natural science building, the library building, and other buildings. The water mains are in need of repair or replacement.

Operation and Maintenance: A maintenance engineer, who also teaches in the school of forestry, has charge of operation and maintenance of the physical plant. Under him are (1) a custodian in charge of the cleaning of buildings and the care of grounds, (2) a chief engineer in charge of the heating plant, and (3) repairmen and watchmen, who are directly responsible to the maintenance engineer.

Better preservation of floors would be desirable. The waxing of floors will not hold as a protection under heavy college traffic. A more permanent preservative is needed. There is only one rotary floor machine for all buildings and it has been in use for only a year. Another machine is needed so that janitors can cover all floors in vacation periods.

Much of the furniture of classrooms needs redecoration.

Window glass needs more frequent cleaning than once or twice a year. Toilet rooms were clean at the time of inspection. Blackboards and erasers were, generally, clean.

Heating is done from a central plant. There are two boilers, of which one is a standby. These boilers are of very large capacity and high pressure, and are operated with forced draft secured from a large fan. Pressure is held at 125 pounds, with the blowoff set at 150 pounds. The furnaces are fed continuously by a stoker. One furnace is adequate to heat the buildings most of the year. There is need, however, for more heat than one furnace can produce, at certain times of the year, since the new buildings have been completed. There should be a standby boiler. Hence, the state should install an additional heating unit in the central heating plant as soon as it can afford to do so. The steam mains should also be made larger.

Receipts and Expenditures:

Income: The current income of the institution, for 1940-1941, as shown in the financial report of the business manager, dated September, 1941, is as follows:

	Amount	Percent
Student fees - resident students	$137,456.58	28.1
Fees - extension	7,452.00	1.5
State appropriations	285,025.22	58.3
Federal grants and other state aid	11,741.40	2.4
Sundry sales and other income	12,747.74	2.6
Endowments (includes income from land grants)	34,365.19	7.1
Total	$488,788.13	100.0

In addition, income from auxiliary activities amounted to $143,972.97. These agencies are the residence halls and health service.

Federal grants and other state aid consisted of grants for the forestry nursery, amounting to $4,457.38, for civil aeronautics, $2,842, and for home economics, under the Smith-Hughes and George-Deen acts, $4,442.02.

Sundry sales were: nursery stock, $5,470.61; journalism print shop, $5,546.08. and miscellaneous, $461.02.

Expenditures: The expenditures for 1940-1941, as shown by the business manager of the state university, in his annual report, were as follows:

	Amount	Percent
By divisions:		
Administration and general	$ 51,481.09	10.5
Educational	347,497.62	70.9
Physical plant operation and maintenance	90,930.84	18.6
Total	$489,909.55	100.0
By object:		
Salaries and wages	$376,131.96	76.8
Supplies and expense	78,003.81	15.9
Repairs and replacements*	18,599.01	3.8
Capital (including books)*	17,174.77	3.5
Total	$489,909.55	100.0
For operation:		
Administration and general	$ 51,346.20	
Educational	329,049.16	
Physical plant	73,740.41	
Total	$454,135.77	
For repairs and replacements:		
Administration and general	$ 68.10	
Education	3,206.28	
Physical plant	15,324.63	
Total	$ 18,599.01	

*Evidently, due to error, these figures were reversed on page 3 of the report of the business manager. They are, apparently, correct on page 4 of the report of the business manager, as is shown in the breakdown for operation, repairs and replacement, and capital, and are given, here, as shown on page 4 of the report.

(Cont'd)

For capital:

Administration and general	$ 66.79
Education	15,242.18
Physical plant	1,865.80
Total	$ 17,174.77

The appropriations for the next biennium have been greatly increased over the receipts of 1940-1941. Comparisons of the items, except federal grants and endowment income, may be compared as follows:

	Actual 1940-1941	Appropriated 1941-1942	Appropriated 1942-1943
For salaries and expenses	$285,025.22	$285,860	$295,860
For adjustments and partial restoration of salary decreases in 1933	-	25,240	31,240
For experiment station	-	5,000	5,000
From the general fund	179,456.58	155,000	155,000
Total	$464,481.80	$471,100	$487,100

The decrease of appropriation from the general fund probably will be more than offset by the decrease in receipts of the institution to be deposited to the credit of the general fund, because of decrease of enrollment. The income will increase this year, at the same time there has been a large decrease of enrollment of students and income will increase still further next year. The prospects for economies lie in holding expenditures steady or in decreasing them as enrollment declines, further, and but little can be saved from expenditures for this year.

Value and Cost of the Service:

Nearly all states of the union support universities as government agencies and those that do not have one or several large, private universities within their borders. The service rendered by universities in instruction and research are of inestimable value to a state and such services are not confined by the boundaries of states.

Instruction takes the form of teaching resident students in classes and of teaching students away from the campus in extension classes, by correspondence, by radio, in some institutions, by lectures by the professional staff, and in other ways. Extension instruction from Montana State University should be further developed.

Research is not less important in the universities of the United States than is instruction, but it costs much less. Much of modern civilization has been initiated from and developed in the university research laboratories and libraries of this and other countries. Little money is expended for organized research by Montana State University and very little research is being done by the staff, though there are a few members of the staff who have made important contributions on their own initiative and who have important studies under way. However, research activities need to be encouraged by some financial support and some of the time, of the more capable faculty members, should be scheduled for research work.

Total current expenditures, for operation and repairs and replacements, for Montana State University, for administration, education, and the physical plant in 1940-1941, amounted to $472,734.78. This does not include expenditures for the self-supporting enterprises of the institution. Expenditures for operation, alone, amounted to $454,135.77.

Total enrollment, in 1940-1941, was 2,036 students. Equivalent full-time student enrollment, according to the method previously used for computing it, was 1,687 students.

Using these two sets of figures, unit costs may be computed as follows:

Total cost per student enrolled	$232.14
Operation cost per student enrolled	223.05
Total cost per equivalent full-time student	280.22
Operation cost per equivalent full-time student	269.20

The last figure, $269.20, is probably the most significant unit cost figure of the four. It has been computed with the omission of expenditures for repairs and replacements. Also, it uses an equivalent full-time student basis as the divisor, which counts a student only for that portion of the school year for which he is enrolled in the university.

Expenditures for operation, that are strictly for the departments, omitting all administration expense, plant operation expense, library expense, and the like, but including expenses for the departments, excepting capital outlays, may be divided by the number of equivalent full-time students in each department, (determined by dividing the work of each department by the number of credit hours the average student carries), to determine the cost of instruction in that department. The results are as follows:

Department or School	Number of Equivalent Full-Time Students	Expenditure for Operation and Repairs	Cost per Equivalent Full-Time Student
History and political science	140.0	$ 7,602.75	$ 54.31
Economics and sociology	128.9	8,909.00	69.12
Classical languages	55.6	4,450.00	80.04
Business administration	131.2	11,893.36	90.65
Psychology	67.1	6,791.35	101.21
Modern languages	122.3	13,776.69	112.65
English	171.2	19,362.56	113.10
Zoology	73.7	8,600.47	116.70
Botany	84.2	11,325.91	134.51
Fine arts	20.6	2,872.01	139.42
Physical education [a]	64.9	9,826.39	151.41
Mathematics	72.7	11,040.00	151.86
Chemistry	95.2	14,655.36	153.94
Physics	27.2	5,271.16	193.84
Education	50.5	10,106.50	200.13
Forestry [b]	92.1	20,704.43	224.81
Bacteriology	14.8	3,375.87	228.10
Home economics	47.6	11,258.38	236.52
Music	71.2	17,670.48	248.18
Law	66.2	16,444.15	248.40
Journalism [c]	40.8	11,602.73	284.38
Geology	21.1	6,957.95	329.76
Pharmacy	21.3	9,037.51	424.30
Library economy	5.8	-	-
Religion	1.1	-	-

[a] Omits the expenditures for athletics.

[b] Omits the expenditures for the forest conservation and experiment stations.

[c] Omits the expenditures for the print shop.

Expenditures are very high for journalism, geology, and pharmacy. Careful consideration should be given to the necessity for continuing work in these subject fields.

Summary of Recommendations:

On the basis of data that have been presented, relating to Montana State University, and the conclusions that have been drawn from them, it is recommended:

Recommendations Not Requiring Legislation:

(1) That heads of organization units, directly responsible to the president, be reduced in number, so that the president can serve as the coordinating officer of fewer and larger units, and so that a dean of the faculty will not be needed.

(2) That the plan of organization of instruction, as outlined in the college catalog, be made effective in the organization of the staff, and that divisions, rather than the departments, be made the principal organization units of the college of arts and sciences.

(3) That the chairman of divisions in the college of arts and sciences be designated as directors of divisions, in order to distinguish them from the chairmen of departments, and that they actively direct the work of the departments under them, through the chairmen of the several departments.

(4) That the directors of the four divisions of the college of arts and sciences be responsible to the dean of the college of arts and sciences and that, if the divisions are not made the principal administrative units of the college of arts and sciences, the chairmen of departments be made directly responsible to the dean of that college instead of to the president of the institution.

(5) That the department of military science and tactics, be included in the division of biological science of the college of arts and sciences, on the ground that it should be in some division, and it can be placed in this division as logically as can physical education, which is now in the division of biological science.

(6) That a dean of student personnel be appointed to coordinate the several activities relating to student welfare, such as guidance and counseling, freshman orientation, the testing program, scholarships, loan funds, student employment, student discipline, religious activities, student housing, student recreation, social activities, fraternities and clubs, health and medical service, operation of the student union, and the like, and the supervision and direction of all such student activities and enterprises.

(7) That the guidance function be centered in the proposed division of student personnel, that guidance and counseling be the principal function of that proposed division, and that the dean of that division direct the guidance and counseling work of the division of personnel and of the instruction schools and divisions and coordinate the guidance and counseling activities of such organization units as must continue to fulfill that function.

(8) That the proposed division of student personnel be under the direction of a dean of student personnel.

(9) That the number of members on the curriculum committee be reduced by eliminating the heads of the many departments and substituting the heads of the four divisions of the college of arts and sciences.

(10) That the faculties of the several schools, divisions, and departments, that comprise Montana State University, each formulate and adopt comprehensive and specific objectives or purposes to be accomplished by their units, in terms of influences upon students; that these be published in connection with the announcements of courses to be taught; and that members of the faculties, themselves, use the adopted objectives to guide their own teaching activities.

(11) That the number of courses offered in several of the departments be reduced by the elimination of courses that are not taught for lack of students and by the elimination of many of the more highly specialized courses that are offered to undergraduate students.

(12) That most courses having very small enrollment be either discontinued or taught only in alternate years as a means of increasing their size.

(13) That the number of fields in which graduate work is offered be reduced, and that graduate work offered in fields in which there is little or no demand be discontinued.

(14) That careful consideration be given to the possible undesirability of continuing work in journalism, geology, and pharmacy.

(15) That the training of home economics teachers be discontinued by the state university and that careful consideration be given to the advisability of reducing instruction in home economics in this institution to minor status.

(16) That the several courses in the methods of teaching various subjects be discontinued and that a general methods course be taught by the school of education in close correlation with observation and practice teaching.

(17) That practice teachers be trained in various high schools of the state rather than in the Missoula high and elementary schools, alone.

(18) That the number of hours of classroom observation and practice teaching for the training of teachers be increased.

(19) That the position of dean of the faculty, to which no faculty member or dean is responsible, be discontinued, and that the chairman of the curriculum committee be appointed by the president, without special title.

(20) That a few more faculty members of high professional attainments, who have made outstanding contributions to their fields of study, be employed in key departments, as vacancies occur that need to be filled, as a means of setting a high pace of professional accomplishment and to stimulate scholarly accomplishments in other members of the faculty and among the students.

(21) That the staff of departments in which teaching loads are light be reduced and that members be added to the staff of departments in which teaching loads are heavy.

(22) That faculty rank and salary be readjusted to correspond with the value of the incumbents of positions to the university and to the state.

(23) That research activities be encouraged with some financial support and that the most capable members of the instruction staff be assigned time for research projects in their fields of specialization, and that the part of their time devoted to research, be charged to organized research.

(24) That efforts be made to secure private funds for research.

(25) That the program of subject offerings for the summer session be greatly reduced, with the purpose of forming larger summer session classes.

(26) That the staff employed for summer session teaching be reduced.

(27) That books for general freshmen courses be rented by the bookstore to freshmen so that their study will not be limited to the reserve room of the library building, which is needed for use as a general reading and study room.

(28) That extension instruction from the state university be further developed in various parts of the state.

(29) That extension class work be given as a part of the regular work of the institution, without designation as extension work, and that it be given as a part of the regular teaching loads of instructors, and without additional compensation.

(30) That all correspondence work, of college grade, be given from the state university; that correspondence work be discontinued from the three small colleges; and that extra compensation for correspondence instruction be discontinued.

(31) That a smaller staff be employed for health and medical service than is now employed and that either a larger proportion of the expense of students for hospital service and operations be paid, with the money saved, or that the fees be reduced below $9 a year.

(32) That the administration of student employment, scholarships, and loan funds be under central and common direction in a division of student personnel.

(33) That efforts be made to secure an increase in the number of participants in intramural sports.

(34) That the cost of intramural sports be included in the cost of physical education, as a part of the physical education program.

(35) That intercollegiate athletics, of all kinds, be conducted on a wholly self-supporting basis, including the portion of the salaries of coaches that represents the proportion of time they devote to coaching of "varsity" teams.

(36) That, in view of the fact that building materials and labor will be difficult to secure in the near future, and that enrollment has declined, markedly, and may decline further, certain needed plant improvements be made when conditions are more favorable for building, and when enrollment is increasing, and that, among these, be (1) either the reconditioning of the old science building for use by classes in modern languages, English, and other subjects, or (2) the construction of a new general classroom building.

(37) That physics equipment be moved to the chemistry-pharmacy building and that physics be taught in the classrooms and in the laboratory rooms, of that building.

(38) That the library building be remodeled to better serve the library needs of the university.

(39) That repairs be made to the partitions of the rooms of the law library and to the floors that support the book stacks, and that, unless the president's residence is to be abandoned, it be reconditioned and renovated, and that the roofs of several buildings be repaired.

(40) That wood floors be sanded, sealed, and treated with a permanent preservative.

(41) That a second rotary floor machine be purchased.

(42) That window glass be cleaned more frequently than once or twice a year.

Recommendations Requiring Legislation:

(43) That, as soon as the state can afford the expense, the main building, used for the administrative offices, be remodeled and renovated.

(44) That, as soon as the state can afford the outlay, another heating unit be installed and the steam mains be enlarged or supplemented.

(45) That, as soon as the state can afford the expense, considerable painting be done inside and outside of many of the buildings, artificial lighting systems be improved, some of the water mains be replaced, and furniture be redecorated.

(46) That, as soon as the state is financially able to do so, each annual budget contain an appropriation of $25,000, or more, for financing research activities, and that some of the members of the instruction staff, who are qualified to do productive research work, be employed for specific projects during the summer months and for a part of their time during the school year.